DOCUMENT RESUME

ED 270 899 EA 018 601

AUTHOR Hawkins, Harold L.; Lilley, H. Edward
TITLE Guide for School Facility Appraisal. 1986 Edition.
INSTITUTION Council of Educational Facility Planners, Columbus, Ohio.
PUB DATE 86
NOTE 90p.
AVAILABLE FROM Publication Sales, Council of Educational Facility Planners, International, 29 West Woodruff Avenue, Columbus, OH 43210.
PUB TYPE Guides - Non-Classroom Use (055) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Accessibility (for Disabled); Asbestos; *Building Operation; Building Plans; Design Requirements; *Educational Environment; Educational Equipment; *Educational Facilities; *Educational Facilities Design; *Educational Facilities Planning; Educational Improvement; Elementary Secondary Education; Evaluation Methods; *Facility Guidelines; School Buildings; School Construction; School Maintenance; School Safety; School Space; Site Development; Site Selection

ABSTRACT

This guide provides evaluative criteria for the elementary-secondary administrator to measure the quality of a school's facilities for general condition and suitability for educational programs. Appraisal criteria and instruments are categorized into six major areas of discussion: "The School Site," "Structural and Mechanical Features," "Plant Maintainability," "School Building Safety," "Educational Adequacy," and "Environment for Education." The guide contains approximately 125 items that affect the functioning of a school. Nontechnical language is used so that the process of appraisal may be accomplished by educators and community leaders. Use of the instruments, however, requires a general knowledge of the educational program, operation of a physical plant, and state/national standards for educational facilities. "Barrier-Freeness" is discussed following the section on appraisal criteria, which is a federally required facility characteristic allowing physical accessibility to all educational programs regardless of physical or mental disabilities. Following a brief section devoted to asbestos as a safety problem, a glossary of terms is presented. Three appendices offer guides to independent appraisal of elementary, middle school, and high school facilities. Eighteen references are given. (CJH)

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GUIDE FOR SCHOOL FACILITY APPRAISAL

by

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GUIDE FOR

SCHOOL FACILITY

APPRAISAL

Developed in Cooperation
with the

COUNCIL OF EDUCATIONAL FACILITY PLANNERS INTERNATIONAL

Columbus, Ohio

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1986 EDITION

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Published by the Council of Educational Facility Planners, International
29 West Woodruff Avenue
Columbus, Ohio 43210

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ACKNOWLEDGEMENTS

The authors wish to acknowledge the assistance of the thirty members of the Council for Educational Facility Planners, International who reviewed the appraisal instruments. The criteria, the instrument items and the allocated weights have been validated to the extent possible by the expertise of these qualified authorities in facility planning. Any deficiencies or shortcomings in the present materials result from the authors' judgment rather than that of the individuals who aided in the validation process.

Preparation of these materials was also greatly enhanced by the assistance of Joan Lott, Martha Copp, David Hebert, Evangeline McJamerson, Debbie Saunders and John Fluth. To each of these is owed a very real debt of gratitude.

H.L.H.

H.E.L.

INTRODUCTION

This Appraisal Guide was developed to meet the need for comprehensive, up-to-date instruments to measure the quality and educational effectiveness of school facilities. Therefore, its use is not to determine the insurable value of a building as in a financial property appraisal. The guide instead has as its purpose the means for evaluation of school facilities in terms of general condition and suitability to serve the educational program of the school.

The appraisal criteria and instruments are categorized into six major areas: The School Site; Structural and Mechanical Features; Plant Maintainability; School Building Safety; Educational Adequacy; and Environment for Education. The Guide is composed of approximately 125 items, each important to the function of a school. The appraisal instruments are adapted for specific use at elementary, middle and high school levels. Nontechnical language is used throughout so that process of appraisal might be accomplished by educators and community leaders as well as by technical experts in school facilities. However, persons using the instruments need a general knowledge of the educational program, the operation of a physical plant and state/national standards for educational facilities.

The Appraisal Guide was developed with the assistance of experts in the field and graduate students in educational administration. The earlier versions were utilized during the past 12 years for graduate instruction and school building appraisals throughout the U.S. That experience has led to this new compilation. The new appraisal items and criteria weights were subjected to careful analysis including review by architects, school administrators and facility planners.

The appraisal process achieves appropriate reliability when the instruments are viewed as a means of developing team consensus. Interpreter reliability has been found to be sufficient for and compatible with the purposes for which the instruments were formulated.

USE OF THE APPRAISAL GUIDE

Persons taking part in a comprehensive school facility appraisal often say they will never again look at a school building in the same way they did prior to that experience. Features or conditions often previously overlooked become readily apparent.

The most acceptable method of using the appraisal materials is to have a small team of consultants thoroughly familiar with the Guide train the principal and/or local administrators in its use. The local administrator(s) should then conduct the appraisals.

To Perform a Post-Occupancy Review

It is customary for architects and school district administrators to assess the adequacy of a new structure after it has been in use for a brief time, six months to a year. Such a review attempts to determine, for example, which of the design features function as intended. Does the physical plant serve the instructional program especially well? Are some of the construction materials already displaying problems of maintainability? If the post occupancy review focuses as it should, on the congruence between the user's needs and the characteristics of the new structure, the instruments in the Appraisal Guide will serve a useful purpose. Increased emphasis should be given to post-occupancy review of all new construction.

To Formulate a Permanent Record

Superintendents of Buildings and Grounds, especially in larger school systems, are often expected to maintain files that will provide definitive information about each building under their responsibility. The careful completion of the Appraisal Guide, even when done by one person will provide a useful administrative record and at the same time reveal correctable problems that may have been previously overlooked. Annual appraisals for four or five years by local administrators is a good plan. The consultant team referenced above might then be asked to return and identify and correct bias or mistaken ratings. The profile of early appraisal placed consecutively on transparencies will provide trend information on facility deterioration or inadequacy due to program changes. In this way the administration can plan, well in advance, the need for remodeling or replacement based on its own minimum scales.

To Highlight Specific Appraisal Needs

Although the Appraisal Guide is a comprehensive instrument, it can be used for specific appraisal needs. The School Site criteria, for example, may be utilized separate from the total guide for rating an existing site or for the consideration of new site acquisition. The School Building Safety section also may be used for a specific analysis of the safety features desired in every school building. Because the review of safety conditions is an important continuous need for school personnel, the Guide was designed so that school safety could be a separate consideration rather than intermingled with all portions of the Guide. Likewise, other sections of the instrument can serve specialized needs of a school system.

To Examine the Need for New Facilities

The use of the Appraisal Guide by a citizen committee (along with school personnel) can be an essential preliminary step to the development of a new school building program. The degree of building obsolescence can be dramatically presented through the format of the completed appraisal. The appraisers themselves can be helpful advocates in the community to explain existing inadequacies.

To Evaluate the Need for Renovation

With school enrollments beginning to stablize and/or the problem of population shifts, some school districts are no longer in need of new schools to meet growth conditions. In the future the trend toward school renovation may be expected to increase. The Appraisal Guide can serve as a useful tool in determining the feasibility of remodeling the building as a means to better serve the program needs. Buildings that are appraised as Satisfactory or Borderline may be appropriate for careful study in terms of renovation rather than abandonment.

To Serve as an Instructional Tool

An effective method of teaching about the school plant is to utilize field-oriented experience. University classes wishing to bring students into direct consideration of the relationship between school facilities and the instructional program will find the Appraisal Guide and the appraisal process a useful and challenging instructional tool. The criteria provide a range of school building factors which serve as appropriate instructional material for graduate students in educational administration and architecture. The group activity of facility appraisal can stimulate and motivate students in a manner often not found with other instructional modes.

APPRAISAL CRITERIA FOR
1.0 THE SCHOOL SITE

A school site is more than merely a building location. It is an integral part of the school facility and one of the basic tools in the educational process. The planned educational experiences as well as many community functions will be enhanced, or limited, by the adequacy of the school site. Therefore, the selection and development of the site should be undertaken with great care. The criteria for selecting a site should be sufficiently broad and flexible to allow for the character of the school district and the educational program to be provided. In considering an existing or prospective school site, attention should be directed toward its location and potential for the identified educational and community needs.

1.1 Site is central to and easily accessible to the present and/or future population. (20)

A central location is essential at the elementary and middle school levels. Although most school districts no longer find the neighborhood school concept feasible, it continues to be helpful if significant numbers of students attend a school in their immediate residential area. Closeness of the school to student populations also minimizes parental and bus transportation. For high school students it is expected that most will be bussed or will provide their own transportation. In developing communities (or in declining ones) the use of a stick-pin map to locate student homes is an effective method of visually determining the degree of centrality for any site. (Computerized mapping will soon make this method more convenient). The following are considered maximum walking distances for school attendance: elementary–one mile; secondary–two miles. Maximum riding time on school buses is generally accepted as: elementary–30 minutes; secondary–60 minutes.

1.2 Location is removed from undesirable business, industry and traffic. (5)

The surrounding environment should be compatible with educational needs and development. Safe and healthful conditions are necessary for students and teachers. Areas where danger of pollution or explosion should be avoided. Schools are best located in areas where there will be no adverse affects from industrial smoke, dust or odors. A site free from disturbing noise pollution, e.g. trucks, railways and airline traffic, is preferable. Proper zoning restrictions can help protect the school environment. Most states have laws that limit the proximity of liquor and pornography establishments to schools and churches. The criteria cited apply generally to schools regardless of grade level. Because of the acreage required for senior high schools, it is somewhat more difficult to avoid proximity to all undesirable factors.

1.3 Site is large enough to meet educational needs determined by the state and local district. (25)

Most state education departments either mandate or recommend the minimum number of acres needed for the specific grade levels. Typical current acreage specifications are:

Elementary School	10 acres plus one acre for each 100 students
Middle School	20 acres plus one acre for each 100 students
High School	30 acres plus one acre for each 100 students

According to the American Institute of Architects 1981 State Requirements Survey, nearly one-third of the states use the above guideline. Several states have no standard for the size of school sites. Where land acquisition is excessively costly, state departments usually concede somewhat more restrictive acreage allowances. Appraisals of site size should give consideration to the nature of the program requirements, but full credit should not be given for sites smaller than the ideal referenced in this criterion. A scoring of satisfactory may be given if state minimums are met.

1.4 Campus is large enough for future onsite expansion, if needed. (10)

This criterion is an extension of item 1.3. Note carefully the information provided on that item. Then determine if there is any evidence which suggests that the site might be suitable for an increased enrollment. In any circumstance where attendance service area is fully developed in terms of population provide full credit in the appraisal. Likewise full credit is due if enrollments are declining. Partial credit is allowable if adjacent land for site expansion is readily available. No distinction need be made on this item for the specific building grade level.

1.5 Topography is varied enough to provide desired appearance but without steep inclines. (5)

The site should have an elevation and contour which will insure good drainage and yet avoid soil erosion.

Flatness may add to the ease (and reduce cost) of construction but extreme flatness is often very monotonous especially over the full life of the building. Steep inclines, however, may create construction problems and increase site development costs. Fault areas should be avoided. Natural variation in topography can add greatly to the aesthetic beauty of the site and challenge the architect to a modest creative orientation of the building with the surroundings. Topographical considerations should receive equal concern regardless of whether the building serves elementary, middle, or high school students.

1.6 Site is well landscaped. (5)

Attractive landscaping is an asset to every school building. The site should support plant life, natural vegetation, and trees without undue effort. A school building is one of the most effective public relations tools. Is the image of the school a positive one for those who attend, work at, or visit? Does the school appear attractive to those who merely have reason to pass by? The landscaping is an important part of that image. Parent and student groups often can assist in improving the landscaping arrangements. Care should be taken, however, to assure that provision is made for continued maintenance of plantings and shrubbery. Smaller structures, such as elementary schools, are more easily landscaped. Sometime at high schools the landscaping can best be limited to foundation plantings at what is considered the main entrance to the facility. Ideally one looks for comprehensive efforts that create a parklike appearance in significant portions of the site.

1.7 Site has stable well drained soil free of erosion. (5)

The type of soil (rocky, sandy, etc.) and its drainage, fertility, and stability are important. Some schools are necessarily located in coastal lowlands where drainage is difficult to obtain. In those instances, the building should be placed at an elevation at least sufficient to have water run away from the structure in all directions. For any school building, especially when outdoor activities comprise a part of the day, good drainage is not only an appearance factor but also a cost factor affecting the daily care of the building. Some authorities consider the site drainage matter as relevant to the number of school custodians needed to keep the building appropriately clean on a daily basis. In scoring this item, regardless of student age, look carefully at student traffic patterns for all areas on the site.

1.8 Campus is suitable for special instructional needs, e.g. nature study, school gardens, restricted play areas. [Elementary] (5)

1.8 Campus is suitable for special instructional needs, e.g. nature study, school gardens, and restricted play areas. [Middle School] (5)

1.8 Campus is suitable for special instructional needs, e.g., outdoor learning laboratories. [High School] (5)

The instructional program in most schools today extends beyond the classroom. The school site can be a valuable asset to learning. Elementary schools need space for outdoor physical education as well as free play. For older youth, practice fields for a wide range of activities are essential. Nature trails add greatly not only to the natural beauty of the school site but to supplement science classes at all grade levels. Open water may be a hazard particularly for young children, but if state laws and topography do not preclude this feature on a school campus, the instructional program can benefit. Athletic fields are essential at the secondary level and need to be in close proximity to the classroom buildings to maximize convenience and supervision.

1.9 Pedestrian services include adequate sidewalks with designated crosswalks, curb cuts, and correct slopes. (5)

Both onsite and offsite sidewalks are a significant need for all age levels including adult employees and visitors. For young children the school site should help to create and maintain desirable patterns of safe walking. Care should be given to pedestrian and vehicular traffic flow so that hazardous crossings are avoided. Curb cuts and appropriate sidewalk slopes are legal requirements that must be provided for handicapped students and adults. See the appendix for more complete information regarding the requirements for barrier-freeness in educational facilities.

1.10 Sufficient onsite solid surface parking for faculty, students, staff and community is provided. [Senior High School] (5)

Parking area criteria:

1. One space for each teacher and staff member.
2. At the high school level, review the 11th and 12th grade enrollments for the previous two years. Consider factors, such as urban vs. rural and community affluence. It is usually estimated that 50% of the older students will drive cars to school.

3. The minimum space per car should be 8 - 1/2' X 18'.
4. It is fairly accurate to allow 300 square feet per car.
5. For the disabled allow at least one space or 2% of the total number of spaces. Each of these spaces should be 12' X 18'.
6. Parking areas should have curb cuts for the disabled, if the parking area is not at ground level.

1.10 Sufficient onsite parking for faculty and staff is provided. [Elementary School] [Middle School] (5)

The determination of an adequate amount of parking space is often a problem for school administrators and architects. The following guidelines may be used to determine an appropriate amount of parking space. Note that this determination does not serve for extensive visitor and/or spectator parking at school events.

1.11 Playgrounds are removed from streets and parking areas. [Elementary] (5)

1.11 Intramural athletic areas are removed from streets and parking areas. [Middle School] (5)

1.11 Athletic areas are adequate with sufficient parking space. [High School] (5)

For an elementary school the playground areas are of importance. At that age, outdoor activity is both physically and mentally desirable. Location of playgrounds is a major consideration when devising the site utilization plan. Playgrounds should not be adjacent to main highways and particularly not near school vehicular entrances to the site. Safety and convenience are basic to this criterion.

For the middle school the elementary criteria apply generally except that the context used is directed to athletic and group games appropriate for the age of students. At the high school level the emphasis should be the adequacy of parking space -- for student participants and spectators.

1.12 Playgrounds are well equipped for age levels. [Elementary] (5)

Young children in elementary schools are usually provided with playground equipment. Factors to be considered are location, safety and spacing. Areas with permanently installed equipment should be near the building so as to maximize accessibility for students and supervision. Safety is reflected in terms of surface materials and the hazard free nature of the equipment itself. Ground surfaces range from natural dirt to hard surface to sand or wood chip material. For small areas synthetic materials may be the most safe. Equipment should be free of sharp edges, of sound construction, in good repair, and of a design appropriate to the age of the students. Spacing of equipment should be noted. For traditional types of equipment reasonable distance should be provided between pieces of equipment. New concepts, however, reflect creative design with the use of wood, concrete and rubber. These play areas are often planned as one continuous unit so the children move easily from one activity to the next.

1.12 Intramural areas are provided for a variety of youth activities. [Middle School] (5)

More space is needed for the middle school students than elementary. Intramural games such as softball, soccer, touch football, etc. need extensive planned areas for the activity. For a larger school enrollment several areas may be needed for each of the activities. In some situations areas may be designated separately for boys and for girls. Attention should be given to well-developed space for a diversity of intramural games.

1.12 Streets and parking areas are well designed with solid surfaces. [High School] (5)

Although the streets and parking areas associated with the high school may not necessarily be concrete or asphalt, it is essential that such areas are smooth and solid. The amount of student and adult traffic at any high school necessitates easy and convenient access. Driving over and parking on grass surfaces usually leads to ruts and holes which make use during wet periods almost impossible and not much better under dry conditions. Although curved drives with landscape will provide aesthetic relief, care should be given to avoid sharp curves, excess corners, and dead-end streets.

APPRAISAL CRITERIA FOR
2.0 STRUCTURAL AND MECHANICAL FEATURES

Structural and mechanical features are basic to all functions of a school plant. These features determine future maintenance costs, capability of expansion, and feasibility of making changes to meet new requirements in education. It is important that basic designs for the electrical, water and waste disposal assure sufficient capacity for present and future needs. Systems designed for minimal initial costs are invitations for future operational problems.

All designs and specifications should meet local building codes as well as state educational requirements. If, in the appraisal of the structural and mechanical features of a school facility unusual problems are discovered, advice of professionals in the construction industry should be sought. Because deficiencies in structural and mechanical design along with code violations are costly to correct, all efforts should be directed toward the prevention of construction errors. Criteria in this section are separated into structural and mechanical/electrical factors.

2.1 Structure meets or exceeds all barrier free requirements both externally and internally.(15)

See material regarding the requirements for barrier-freeness in educational facilities.

2.2 Foundations are strong and stable with proper expansion joints. (10)

Exposed foundation walls can be inspected from the outside of the building. Look for masonry cracks at corners of the building. Such cracks often cut through a major portion of the exposed foundation wall. Foundation cracks may significantly weaken the structure and/or allow for moisture to seep through the foundation. Check also where additions are attached to a previous structure. Expansion joints are used in long wings of school buildings. Without expansion joints, long single building units will develop cracks due to expansion and contraction of the basic structure.

2.3 Exterior and interior walls are free of deterioration. (10)

Deterioration of building walls may include any or all of these problems. Small cracks may exist inside or outside the buildings. Mortar joints may be cracked, loose or flaking. Interior walls may have cracks, holes or plaster may be powdery. Mildew can be a problem either inside or outside the building. Walls that are stained and/or marked are unsightly even though not a major structural problem. The walls represent potential safety, structural, maintenance and/or appearance problems.

2.4 Roofs are structurally sound, have positive drainage and are weather tight.(15)

The single most common structural problem in school buildings is the roof. Scarcely a school facility exists that at some time has not leaked. The roof should be weather proof and insulated to the maximum extent that reasonable cost permits. Attention to proper relief of roof areas is essential. Proper drainage should be provided by durable and adequate valleys, drains and downspouts. Downspouts and drains should connect to storm sewers. Flat roofs are usually insulated and covered with tar and gravel. Glass clear story (glass in the roofing) is not recommended because of problems associated with control of sunlight, heat gain and loss, and cleaning. Currently there is an increase in the use of pitched roofs covered with prefinished metal.

2.5 Entrances and exits are located so as to permit efficient student traffic flow. (10)

Buildings of compact design and those of long finger-type arrangements are more functional if access is possible at each side of the building. The number of entrances will be determined by the facility size. Normally entrances (and exits) will serve the following specific areas and/or functions: bus transportation, parking, athletic and other outdoor activities, fenced play, emergency evacuation, visits of parents and others, deliveries and service. Corridor widths and numbers of entrances should be geared to the volume of student traffic with reasonable consideration of the functions enumerated above.

2.6 Building "envelope" meets energy use code requirements. (10)

The Electrification Council in Washington, D.C. in its 1983 publication about energy management stresses the importance of the building envelope. It suggests five major circumstances in which the envelope is significant for reduction of heat gain and loss:

- Infiltration and exfiltration
- Solar heat gain through windows
- Heat loss through windows
- Heat gain and loss through walls, roofs, etc.
- Internal heat gain

Energy studies and code requirements typically address these aspects of energy management. A non-technical facility survey can reveal at least preliminary findings that relate to the quality of the materials covering the exterior of the building. These materials may comprise any one or combination of: wood, brick, concrete, metal, glass or space-age plastics.

2.7 Well maintained ceilings adequately retard sound. (5)

Ceilings, in educational facilities, are typically suspended acoustical panels, plaster (sometimes acoustical), wallboard, wood or metal. In buildings constructed since 1950, the suspended ceiling is the most common. Roof leaks frequently cause stains and discoloration of ceilings regardless of the material. Plaster ceilings cost more than the other materials but are also more permanent and durable. The suspended ceilings tend to sag, bend, become dislodged, etc. On the other hand, replacement of a small number of panels is quite easily accomplished. Most ceiling materials have less acoustical value than is provided by carpeted floors.

2.8 Walls permit sufficient flexibility for a variety of class sizes. (5)

Flexibility of interior space has been a long sought after factor in school buildings. At least three design eras have been experienced. Historically all classrooms were expected to be the same size, large enough for 30 - 40 students. Advances in educational methods resulted in a realization that since class sizes tended to vary from year to year, that movable interior walls would better accommodate instructional need. The movable walls, however, were moved so infrequently that the added cost seemed unwarranted. In more recent years, the desire or varying size groups for instruction led to a purposeful designation of small, medium and large rooms.

This item addresses the need for some variation in class sizes through any one or all of the methods referenced above.

2.9 Interior is free of friable asbestos and/or toxic materials. (10)

Schools built during the 1930 - 1970 period often contain hazardous asbestos material. Such material may be in acoustical plaster, suspended ceiling tile, coverings for pipes and vents or insulation.

Occasionally schools encounter problems of floor coverings or insulation that may, under some conditions, emit toxic fumes. School administrators and facility directors are advised to be alert to hazards of this nature which can be extremely harmful to students and employees.

2.10 Electrical service is underground. (5)

Most schools just as with most homes, will have the electrical service provided by overhead wires. Underground service has two major advantages. The unsightly aspect of the lead-in wires is eliminated. Service for electric power, telephone and sometimes cable television, can detract greatly from a fine structure. Of more significance though is the matter of safety. Over-head lines are subject to windstorm and lightning. A recent law suit in Texas was based on the claim that transmission lines constructed by a utility company, emited electrical current that was alleged to be harmful to school children. Power lines crossing playgrounds, parking areas and athletic fields present potential hazards. Ideally all service lines will be placed underground thus improving looks and safety as well as providing decreased maintenance on the service itself.

2.11 Electrical controls are safely protected with disconnect switches easily accessible. (10)

For large buildings on a campus where electrical service needs to be redistributed to several points or buildings on campus, the electric service equipment should be contained in a locked fenced area or housed in a secure building. Interior circuit panel boxes should be kept locked and in an enclosed area to which students do not have access. If circuit switch boxes are located in corridors, the boxes should be kept locked. Panel boxes need to be accurately labeled and disconnect switches need special labeling so that power can be cut off quickly during an emergency.

2.12 Outside water supply is adequate for normal usage. (5)

Normal usage of the water supply includes routine building maintenance, lawn and landscape care, and minor emergencies, such as small fires, etc. For these purposes, at least one water outlet on each side of the building is essential. The adequate supply should also accommodate major fire control. Water supply by hydrant is essential for this purpose. Buildings located in areas without public utilities would benefit from water sources such as ponds or streams of water on the site. Sprinkler systems for lawns and landscaping are highly desirable. Athletic fields usually have need for sufficient water supply to enable the turf to have reasonable growth decreasing a hardened, baked turf that can cause injury.

2.13 Labeled electrical system is not subject to overheating. (10)

With the increased demand for electric power to operate building mechanical equipment as well as the instructional media, the electrical systems in schools become overloaded. In older buildings the original wiring was never intended to serve contemporary requirements. It is not uncommon, even in newer buildings, to encounter problems of overload. For the non-technical appraiser, two methods may reveal the existence of this condition. Ask teachers and custodians if they have problems in their classrooms with power outages. Another technique is to test the electrical supply by turning on lights and equipment and then check breaker boxes for excess heat. Fuses (circuit breakers) should never be bypassed even temporarily since the throw-out of power is intended to prevent a fire from the overheated circuit. All breaker boxes should be properly labeled.

2.14 Each learning/teaching area has four or more convenient wall outlets. (5)

With the increased use of media equipment and computers, classrooms must provide access to electric power. At least one outlet on each of the four walls is desired. These outlets should be in good condition with cover plates properly affixed. In classrooms for young children, plastic caps should be placed over the outlets so as to prevent the insertion of any metal object into the outlet. Appropriate permanent electrical service needs to be furnished in special areas, such as typing rooms, serving areas and computer laboratories.

2.15 Well maintained light sources, properly placed, provide adequate lighting. (15)

Illumination in instructional areas is of major importance. For many years the tendency was to increase the quantity of light. More recent studies, however, place equal value on the quality of light. Lighting authorities disagree on whether illumination has a direct effect on learning. It is certain though that a minimum standard must be maintained to make school work possible.

The quality of light is based on several factors:

Brightness	The relative amount of light available at the work surface in relation to the level of illumination in the field of view.
Glare	The light which hits the work surface at the same angle as it is reflected into the eye.
Visual Comfort	The ease of seeing based on fixture design and placement, amount of contrast and ceiling colors. Recommended colors are ivory, white, light beige and pale yellow.

The quantity of light has been studied carefully in recent years due to the need for energy conservation. The following guidelines are "recommended" levels provided by the Illumination Engineering Society and the "practiced" levels based on actual use in New York City schools:

ILLUMINATION LEVELS

	Recommended Foot Candles	Practiced Foot Candles
Libraries		
Reading rooms and carrels	70	30
Stacks	30	30
Book repair and bindings	70	–
Check in and out, catalogs, card files	50	30

Offices	Recommended	Practiced
Designing, detailed drafting	110	50
Accounting, bookkeeping, and business machines	85	30
Regular office work, reading, transcribing, active filing, and mail sorting	70	30
Corridors and stairways	20	15
Washroom	20	15
Classroom Space		
Regular classroom work	50	30
Chalk boards	100	50
Drafting rooms	100	50
Auditoriums		
Assembly only	20	15
Study hall	50	30
Laboratories		
General work	50	30
Close work	100	50
Lecture Rooms		
General	50	30
Special/demonstration/exhibit	100	50
Exterior		
Parking areas	5	5
Roadways	5	5

Maintenance of the lighting system is also of great importance. Fixtures should be located so as to permit easy replacement of fluorescent tubes and bulbs. Accumulation of dust and dirt on fixtures also greatly decreases lighting efficiency.

A light meter is necessary to determine the footcandles at desk level. A test for glare can be accomplished by placing a mirror on the desktop to ascertain if excessive light is reflected into the eyes of the student.

2.16 There is adequate number and placement of properly maintained drinking fountains including provision for the disabled persons. (10)

Regardless of grade level, drinking fountains in school buildings should be furnished at no less than 1 per 100 students. Many educators would suggest doubling that ratio. Location of fountains should be at one or more central points on each floor.

Most newer schools now provide refrigerated water coolers. These are more easily maintained than the traditional type fountain.

Drinking fountains (and water coolers) for the disabled should be at a 2'-6" height from the floor. In schools for older students, the source of water should not exceed a 3'-0" height.

Many elementary schools provide drinking fountains in each classroom.

2.17 Number and size of restrooms meet or exceed cost requirements. (10)

In all school buildings, the restrooms (lavatories) should be located in convenient areas, at least one per floor for each sex. For the lower elementary grades (especially Prekindergarten and Kindergarten), restrooms may be provided for each room or shared by two rooms. It is appropriate to locate restrooms and/or handwashing facilities

near cafeterias. Kitchen areas must have employee restrooms provided. Although educators often refer to a restroom as a lavatory, technically a lavatory is a handwashing facility. Students using restrooms should have to pass the handwashing facility as they leave the restroom. Some schools have found the large industrial type sink located in a corridor alcove a better arrangement for supervision than having sinks placed in the restrooms.

Although local and state codes vary by states the following serve as a preliminary guide:

Type of School	Number of Lavatories	Number of Water Closets
Elementary School	1 : 30 up to 300 students 1 : 40 for all above 300	Boys* 1 : 40 Girls 1 : 35
Middle School	same	Boys* 1 : 75 Girls 1 : 45
High School	same	Boys* 1 : 75 Girls 1 : 45

* In addition to 1 : 30 for urinals
(See Appendix material regarding requirements for the disabled)

2.18 Internal building water supply is adequate with sufficient pressure to meet health and safety needs. (10)

Water requirements for school buildings may be based on the following per person:

Without cafeteria, gymnasium or showers	15 gal/day
With cafeteria but without gymnasium or showers	20 gal/day
With cafeteria, gymnasium and showers	25 gal/day

Where a public water supply is provided, city officials will be able to provide information on the quantity being furnished to the building. Water pressure may be informally checked by flushing several water closets and turning on drinking fountains and/or handwashing facilities. If pressure does not drop significantly, the system is considered satisfactory.

2.19 Drainage systems are properly maintained and meet or exceed code requirements. (10)

The drainage system inside the building can be checked by forcing a maximum of water through the system. This can be accomplished at the same time as checking item 2.18. When forcing excess water through the system, note how adequately the water is drained.

Discuss the matter of adequate drainage with building personnel that may be expected to be knowledgeable about the matter.

There should be floor drains in each restroom and in other locations where hazard of broken pipes and stopped drains may otherwise create a flooding problem.

2.20 Fire alarms, smoke detectors, and sprinkler systems are properly maintained and meet or exceed code requirements. (10)

The fire alarm system, regardless of the type of school, should be on a separate electrical circuit so that it is not inadvertently turned off. The alarm should have a distinct sound, different from the school bell system. It should be capable of activation from several points in the building in addition to the central office. The alarm should be of sufficient volume to be easily heard throughout the building. A battery powered alarm system should be provided as an alternative in case of a power failure.

Some local codes now require schools to have smoke detectors and/or sprinkler systems. School planners have mixed feelings about such requirements in schools that can be quickly evacuated. Nighttime and weekend emergencies would seem to justify detectors and/or sprinklers more than school day fires. Checks should be made to determine that all such equipment is in proper working condition. Specific local codes must be the final authority.

2.21 Intercommunication systems consist of a central unit that allows dependable two-way communication between the office and each room. (10)

Communication systems might be either a public address system or an internal telephone system. Phones cause less distraction to students but do not permit the "broadcast" of announcements, etc. Two factors should be considered essential: the equipment should be maintained in operable condition; the initial contact should be possible from the classroom as well as the office. In the event of an emergency, this feature is of a major significance.

APPRAISAL CRITERIA FOR
3.0 PLANT MAINTAINABILITY

Local school officials have a responsibility to preserve and protect the physical properties of the district. Buildings should be maintained, as nearly as possible, in their original state. Time, the elements, and normal wear will cause deterioration which hopefully can be lessened by effective operational and maintenance procedures.

Maintainability looks at those aspects of a building which make possible the extended life of the building at reasonable cost. The characteristics of the building that relate to maintainability are design, construction materials, durability of fixed equipment, floor coverings, interior wall and ceiling materials, hardware and fixtures. The emphasis here is on the general quality of the building per se rather than the routine care and maintenance.

Maintainability is built into the facility and therefore results from decisions about "building quality" when the school is originally planned, remodeled or modernized. The true total cost of a building is the original capital investment plus interest costs plus maintenance for the life of the building.

3.1 Windows, doors and walls are of material and finish requiring minimum maintenance.(10)

In all types of school buildings the choice of materials for windows, doors, and walls is of major importance. Sturdy construction will add greatly to the longevity of these building features. The type of finish will determine whether routine cleaning is possible.

Windows may be fixed or operable. If operable, nails and locks are significant factors. Maintenance varies considerably depending on whether frames are wood, steel or aluminum. Glass thickness affects the amount of breakage.

If one checks the door schedule for a new school, it is surprising to become aware of the number, size, type, and finish of the doors throughout the building. Because most doors receive so much use, finish materials that are somewhat permanent, e.g. formica, can make a major difference. Hinges and locks and door closers are always of importance. Panic bars on corridor exits are often a problem due to poor quality.

Ceramic tiled walls are more easily maintained than other finishes. Another alternative is the use of epoxy paint which is almost impossible to scratch or mar and is also rather easily wiped clean. The least durable is flat paint, especially when it is used on cement or cinder block walls.

3.2 Outdoor light fixtures, electric outlets, equipment and other fixtures are accessible for repair and replacement. (10)

The key word here is accessibility. Quality fixtures and equipment will need less repair and less frequent replacement, but too often maintenance is not provided because of the inconvenience of getting to the faulty item. Outdoor lighting is often not kept operative because of the difficulty of reaching the high-up fixture. But it is not unusual to see poor maintenance of outdoor fixtures even when lower to the ground. Plans for maintenance should be made at the same time that installation occurs. Lighting fixtures in auditoriums and gymnasiums can also be difficult to maintain.

Fixtures and equipment should be examined carefully at the time of acquisition or specification to determine that all aspects of maintenance can be performed easily and conveniently.

3.3 Classroom floor coverings require a minimum of care. (10)

The information provided here is applicable to schools at all grade levels. Although referenced here in the context of classrooms, the views expressed about floor coverings relate also to many of the special areas in buildings Because of the critical nature of the classroom, that portion of the school is emphasized here.

Floor materials usually consist of wood, asphalt or vinyl tile, ceramic tile, terrazzo or carpet. Of these, wood and asbestos tile were the most common for many years and are still found in most older buildings. Carpet is now widely accepted as the most easily maintained. Terrazzo has the longest life expectancy and requires relatively little care and maintenance, but it is used more typically in selected areas such as corridors and restrooms.

3.4 Ceilings and walls are easily cleaned and resistant to stain. (10)

Plastered ceilings and walls are the most durable and are easily maintained if protected by a good quality paint. Buildings that have minimal or improperly designed foundations tend to suffer from cracks as the building undergoes shifts. Sound transmission between rooms is usually less with this use of materials.

During the past 30 years ceilings have typically been constructed as a suspended ceiling with acoustical panels. Often such a ceiling will last for many years without any problem. Roof leaks frequently require replacement of panels; unfortunately, despite ease of replacement, variations in coloration cause a less-than-new appearance. Another fault of the panels is sagging and warping which cause the ceiling to have an undesirable look.

3.5 Built-in equipment is designed and constructed for ease of maintenance. (10)

Built-in equipment in any school building will typically include counters, cabinets, shelving, food preparation, food service, dish washing, chalkboards, bulletin boards and metal lockers as well as laboratory and shop equipment.

All such equipment should be designed for educational and/or commercial use. Equipment typically found in residences will not meet the heavy usage occurring in a school setting. Hinges and locking devices are of importance to maintenance reduction. Kitchen and cafeteria equipment usually is made of stainless steel for long service and ease of cleaning. Laboratory counter tops are usually molded from a chemical-resistant modified epoxy resin.

Chalkboards may be made from porcelain enamel, glass, or slate. Extruded aluminum frames and chalk troughs are desirable. Tackboards are more durable when made from cork or vinyl material. Equipment and furnishings, if well made, will not have sharp or rough edges.

3.6 Floors in restrooms, kitchens, cafeterias and corridors require a minimum of maintenance. (10)

See information provided for item 3.3. The areas referenced here are heavy traffic locations and present special daily cleaning and routine maintenance.

A special need in each of these areas is reduction of slippery conditions. Terrazzo and/or ceramic tile are recommended for these locations. Use of floor wax can add to slippery conditions. Floor treatment needs to minimize this problem.

3.7 Walls and ceilings in service areas can be easily cleaned. (10)

See information for item 3.4. The service areas such as kitchens present special problems because of heat, grease and smoke. Ceramic tile is often used because of the ease of cleaning. Painted surfaces, if used, should have the epoxy type of paint. Acoustical ceiling tile for such areas can be provided with a special surface that is more easily wiped clean.

3.8 Restroom fixtures are wall mounted and of quality finish. (10)

Daily cleaning of restrooms in a public facility is always a significant operational task. Restroom fixtures contribute greatly to the ease or difficulty of the care of the restrooms. Whenever the fixtures are floor mounted, floor cleaning is more difficult and less efficient. Daily cleaning of the fixture is more difficult. Wall mounted fixtures greatly aid the daily cleaning and in some respects, may make repairs less difficult.

Wash sinks are typically wall hung and do not create the problem discussed above. Faucets on sinks are a source of difficulty if they are not self-closing.

Stall partitions can also create maintenance problems. In fact, the lack of well anchored partitions leads some school systems to remove partitions from boys' restrooms – a less than appropriate arrangement. Rigid ceiling hung partitions are best if sufficiently well installed.

3.9 Adequate custodial storage space with water and drain is accessible to all areas. (10)

In years past, little consideration was given to the convenient location of custodial closets. More typically in newer schools, this need is recognized. Ideally, a custodial closet will be located nearby to a cluster of classrooms. In buildings with long corridors, this space should be located near the middle of the building wing or section.

Accessibility of water and cleaning materials is important for meeting emergencies and represents a significant time saver for the custodian.

Custodial closets require a minimum of 36 square feet, shelving for cleaning materials, and space for hanging brooms and mops. A mop sink recessed in the floor is needed. Closet doors should be lockable for security purposes.

Especially important is that each floor of a multi-story building have custodial closet space.

3.10 Adequate electric outlets and power are available in every area to permit routine cleaning. (10)

The care of school buildings necessitates the availability of electric service. Floor scrubbers and vacuums require electric power. Although electric cords can be used to obtain access to power, reasonable limitations exist. Classrooms typically will not present a problem. Corridors, gymnasiums, cafeterias and auditoriums, however, may be less conveniently cared for when electric outlets are not provided.

APPRAISAL CRITERIA FOR
4.0 SCHOOL BUILDING SAFETY

School officials have no greater responsibility than to provide and maintain school plants in the safest possible condition. Students, employees, and patrons can reasonably expect that their well-being is protected whenever they enter or use the school facilities. Complete safety cannot always be assured, but every effort must be made to achieve and maintain the highest level of safety that is possible. Safety hazards in school buildings may relate to site location, building design, selection of material or poor operational practice.

This section of the guide considers site, building and emergency safety.

4.1 Access streets have sufficient signals and signs to permit safe entrance to and exit from school area. (5)

The focus here is on student access to the school site. Although the need for safety protection may vary some with the age of the school group to be served, basic safety conditions are the same for all school buildings. Approaches to the school should be marked with signs designating a school zone. Street crossing areas should be marked with appropriate safety zones on the pavement. Stop signs may be necessary depending upon the number of pedestrians and the volume of vehicular traffic. Where both are heavy numberwise, a lighted stop signal may be needed.

Special problems are sometimes created when school sites and playgrounds are on opposite sides of the street. When possible, consideration should be given to closing of a street during the school day.

4.2 Off-site sidewalks are available for safety of pedestrians.

Despite large numbers of students being transported by school buses and many older students driving their own cars, there is a need for sidewalks in school areas. Some students do walk to school, some parents visit school on foot and pedestrian traffic occurs with school activities. Sidewalks are not a luxury but a safe means of traversing streets and roads.

School officials typically have no authority for off-site sidewalk maintenance or construction. It is the school's responsibility, however, to exercise leadership in stressing to community governing bodies that safety in school areas requires sidewalks.

4.3 On-site sidewalks and steps are protected by proper signs and signals. (5)

The school system is responsible for on-site sidewalks. These may lie along the perimeters of the site next to streets or around and between buildings on the campus. Sidewalks need to be of sufficient width, 4 - 6 feet, depending upon the amount of pedestrian traffic. Sections of the walk should lie evenly and be free from holes and cracked corners.

An important safety factor related to walks leading to street access is that street crossing signs, school zone signs, flashing lights or stop lights are provided. A maximum of effort to assure student safety is a major responsibility of school officials.

4.4 Vehicular entrances and exits are safe for traffic flow. (5)

Schools, by their very nature, comprise two elements, students and vehicles. A small school campus may have only a single driveway and parking area; larger schools will have diverse access to specific areas of the campus. Safety hazards increase somewhat as the number of vehicular entrances and exits increase. Of greater significance is the design of such means of access. Drives with one-way traffic are highly essential for most school settings. A separation in driveways and parking areas is desirable for three different groups: (1) students, (2) parents and visitors, and (3) employees. Such an arrangement tends to lessen congestion and improve safety conditions around the school.

4.5 Student loading areas are segregated from other vehicular traffic and pedestrian walkways. (15)

Bus loading areas should be separated from other vehicular traffic to assure the maximum of safety for students while loading and unloading buses. A mixture of types of traffic can create confusion which leads to accidents. Walkways to accommodate non-bus pedestrians should be made as separate as possible. Especially

important is to avoid having students cross bus loading areas and bus driveways in order to reach playgrounds and athletic fields. Ideal is the arrangement found in some large high schools where two bus lanes pass through an enclosed structure similar to a commercial bus terminal. Such a design with as many as eight or ten buses available to students at one time maximizes the safety of students and protection from the elements.

4.6 Locations and types of playground equipment are free from hazard. [Elementary and Middle School] (5)

4.6 Location and types of athletic field equipment are free from hazard. [High School] (5)

Note the references here are to playground equipment at the elementary and middle school levels whereas the focus is on athletic equipment at the high school. Playground equipment has prevailed in its conventional design for many years. Swings, slides, ladders, may poles and similar pieces have been in use for years and always presented less than truly safe conditions. These factors should be considered: (1) design, (2) material, (3) placement, and (4) surrounding surface. Equipment should be designed as injury free as possible. The construction should be free of sharp edges and be of material in sizes easily grasped by the age student using the equipment. Crowded placement of equipment may lead to increased accidents. Surface materials such as sand, pea gravel or wood chips will lessen the impact from falls. More appropriate contemporary equipment, such as modular wooden units, rubber tires and concrete performed crawl units, are consistent with the psychology of play for children. Early childhood (Pre K. and K.) play areas should be fenced and separated from areas used by older children.

High school athletic equipment considered here might include baseball backstops, goal posts, bleachers and running tracks. For outdoor activities at this age level the equipment is viewed primarily in terms of sturdy construction and durability. Bleachers are the single most hazardous item for high schools and should be carefully inspected at least annually. At the high school, condition of playing fields may be of as much importance as the fixed equipment. Avoidance of holes, furrows and sunbaked soil can decrease injury.

4.7 The heating unit(s) is located away from student occupied areas in accordance with local building code. (20)

In older conventional schools it was customary to locate the heating unit (usually a boiler) in a basement area. Often classrooms were built over the furnace room. Such an arrangement is very hazardous in the event of fire or an explosion. Newer buildings usually provide the heating unit in a part of the building at ground level or only partially submerged. In such cases, the area is often separated from classrooms. Standards used in some localities necessitate the location of the heating unit in a structure separate from the main structure. This is the best and safest arrangement. Vocational facilities and classrooms in warmer sections of the country often use open flame gas fired units in instructional areas. Despite safety mechanisms that may be provided on the unit, the wisest policy is to never place an open flame unit where students might be directly accommodated for instruction. Leaking gas fumes, noxious exhausts and explosion are all increased hazards where this type of unit is used.

4.8 Classroom doors are recessed and open outward. (10)

Schools are unusual in the number of doors to be found throughout the building. Special attention should be given to classroom doors since these doors typically have heavy usage. Recess doors are a safety factor which tend to reduce corridor obstruction. The combination of narrow corridors and non-recessed doors create, when the doors are open, more an obstacle course than a hallway. Schools like most public buildings have a need for doors to open outward so as to lessen the risk of student injury if an emergency occurs requiring quick evacuation of the building.

4.9 Exterior doors open outward and are equipped with panic hardware. (10)

This item is an extension of 4.8 and the same rationale applies. Safety conditions in schools are made more acute by the inability over the years for hardware suppliers to design panic hardware that really meet the need. Doors with panic hardware sometimes stick or fail to function properly so that doors do not open easily. In addition these same doors may fail to provide adequate security when the building is closed. This type of poor operation has led to frequent use of padlocks and chains on school exterior doors. Such devices then are sometimes not removed during the operation of the building causing a potentially hazardous circumstance in case of emergency evacuation of the building. Chains, turnbolt locks and deadbolts requiring keys to open from the inside are all unacceptable in schools if the doors are needed for routine or emergency egress.

4.10 Exits are marked with lighted exit signs on separate electrical circuits. (10)

All public buildings, including schools, should have lighted exit markers for exterior doors. These signs

should be wired for electrical service not linked with other power in the building. In case of temporary power failure, such as overloads, the exit signs should be on a separate circuit. An emergency power source is needed for this equipment. The auxiliary service may be provided directly to the lighted signs, or as a separate source of light. Safety in a school assumes that under all conditions, whether in a windowless building or at nighttime, anyone in the building will be able to determine a quick and easy way to vacate the premises.

4.11 Glass is properly located and protected to prevent accidental student contact – safety glass or wire glass where code requires. (5)

Glass was less of a problem in older, more traditional buildings. The use of glass increased as schools were made more visually open. All-glass doors became popular until it was discovered that too many people tried to walk through them. Glass around exterior doorways, as well as in library, office and other special areas can present safety problems. At any location where student traffic is heavy, safety glass is essential. Better yet, as more recent designs provide, is an avoidance of the use of glass where breakage and student injury may occur.

4.12 Emergency lighting is provided throughout the building. (10)

This item speaks to safety conditions reflected in 4.10 but here is extended to the entire building. Classrooms (and any occupied area of the school) need to be protected from complete loss of illumination. Again this possibility exists for windowless buildings and all schools involved in night use. Instructional areas should be provided with sufficient lighting capability to prevent panic. Large auditoriums are especially critical in this respect. Battery powered lighting units are now commonly provided in corridors and large group areas.

4.13 Flooring (including ramps) is maintained in a nonslip condition. (5)

Wet terrazzo floors may be the most hazardous in schools. Such conditions may be found near entrances, in restrooms, and in dressing/shower rooms. Custodial care with a mop may correct this problem. Occasionally someone uses wax on terrazzo thus creating a serious slippery condition. Vinyl tile floors which require frequent scrubbing and waxing often become very slippery, particularly when slightly wet. Obviously schools with carpeted interiors can also present safety problems resulting from worn or loosely attached carpet. Ramps and stairs should be protected with the nonslip strips that are glued or cemented to the critical locations.

4.14 Stair risers do not exceed 7-1/2 inches and range in number from 3-16. (5)

Variations from the norm or inconsistency in the height of stair risers can cause falls and possible injury. The 7-1/2 inch standard may vary somewhat in different localities, but only slight differences should prevail. Note the requirement that no less than three risers should be used. If only one or two risers are provided, there is a tendency to not be aware of the limited difference in levels. The limit of 16 risers assumes a resting point in between flights of stairs where a full story is involved. Also, some value prevails in that a fall on the stairs will at least be limited to the distance of the maximum allowable consecutive risers.

4.15 Multi-story buildings have at least two stairways. (15)

In case a blockage or fire occurs in the proximity of one set of stairs there must be an alternate route to the ground level. In older buildings, this requirement is often met through the provision of a fire escape. Conditions of stairs (where there are two) and/or fire escapes are very important. Concrete steps or metal are best for fire safety. If the stairs are of wood construction, storage areas should not be provided under the stairs. Narrow stairways, excess turns or partial blockages could all increase hazard. Stairways in schools should lead directly to major exits on the ground level.

4.16 Fixed projections in the traffic areas do not extend more than 8 inches from the corridor wall. (5)

Corridors are intended to facilitate the movement of people; in schools, most of these people are students. Fixed projections such as display cases, drinking fountains, benches and storage cabinets are not a problem if the corridors are sufficiently wide. In an emergency, projections can lead to possible injury of students. In a practical sense, the flow of student traffic will be smoother if such obstructions are totally avoided.

4.17 Traffic areas terminate at an exit or a stairway leading to an egress. (5)

Corridors and stairways should be designed so as to facilitate easy access to the exterior of the building. The reason for this is to aid in efficient evacuation of the school. Dead-end corridors are a special hazard. Usually any

corridor that serves more than two classrooms is considered to be a dead-end if no exit is provided at the end of that corridor. For the reasons already mentioned, a stairway is also considered to be improperly designed if it does not lead directly to an exterior doorway. Every precaution should be taken to assure that the building design does not cause the entrapment of building occupants.

4.18 Automatic and manual fire alarm system with a distinctive sound and a flashing light is provided. (10)

Fire alarm systems are a "must" in every school building. Some schools still operate with a manual bell system used regularly for change of classes. Such an arrangement is less than satisfactory. A distinctive sound is essential for an emergency alarm. The automatic system is wired on a separate electrical circuit which is needed to assure the alarm being heard throughout the facility. A manual alarm is needed in the event that all power to the building has been terminated. Current standards require a flashing light in the building that will alert individuals having a loss of hearing.

4.19 There are at least two independent exits to safety from any point in the building. (10)

Fire, explosions and windstorms can block an exit. For this reason all school buildings should have two or more exits to assure that no one will be trapped. Ground level classrooms with direct access to the outdoors represent a safer arrangement than otherwise. Except in windowless buildings (where it is impossible) at least one window should be designed of sufficient size to permit egress. In terms of safety, a good case could be made for at least one window in each room to assure a maximum of safety. Reference again to 4.15 and 4.17 may be helpful.

4.20 Stairways and/or exits are of fire-resistant material. (10)

In older buildings stairways and exits are frequently constructed of wood. Obviously, these features are critical safety factors since in both instances occupants of the building may find their attempts to get out of the building seriously impeded. Concrete and steel are considerably safer materials for these locations since both are more nearly fireproof than wood.

4.21 Noncombustible and/or fire-resistant materials are used throughout the structure. (10)

Although somewhat less significant than the stairways and exits, every school should be made as fire safe as possible. This means a minimum use of wood. Special hazards exist in schools with wooden floors and wainscots in corridors. Less often but sometimes the wooden wainscot is still found in classrooms. In some regions of the nation considerable wood is used for schools with very pleasant appearance. Stage curtains should be checked to determine if they are made of fire resistant material. In such situations sprinkler systems may increase the safety factor.

4.22 Adequate fire safety equipment is properly located. (15)

In schools, fire safety equipment is most often construed to consist of extinguishers (liquid and chemical) and fire hoses. Portable fire extinguishers control by either cooling the flame or by smothering by cutting off the oxygen supply. These devices are appropriate for small fires. Especially important is the periodic inspection required to ascertain that an extinguisher will function adequately when needed. Inspection tags often reveal a lack of service to fire equipment. When such is the case, a false sense of security exits. Hoses are less common than in the past. Their effectiveness depends upon sufficient water pressure and inspection to assure that the hose itself has not deteriorated. Hoses and portable extinguishers need to be located so as to be not more than seconds away from areas of potential fire.

More recently, schools are becoming equipped with heat and/or smoke detection devices. Ceiling sprinklers are being used to some extent. Their value may be largely for times when the building is vacant rather than in use, since most modern schools can be very quickly vacated.

4.23 Ample space is provided in traffic and protected areas for student safety in the event of natural disasters. (5)

Schools often are a safer place for students than their homes. In those instances of tornado, hurricane or other severe storms, the school should have an area designed as a safe place. The underground school provides the safest conditions at such times. Schools with a basement area may also provide reasonable safety. Buildings totally above ground will hopefully have wider corridors or a commons so as to permit students to gather in a section of the structure where there is less hazard during an emergency.

APPRAISAL CRITERIA FOR
5.0 EDUCATIONAL ADEQUACY

The educational adequacy of school buildings, in a sense, represents the purpose of the entire appraisal process. This is true because schools exist primarily to serve the educational needs of a community and school district. The determination of how adequate the facility is, in the final analysis, must be derived from the relationships between program and physical structure. Individual behavior results in part from the environment. The environment provided by the school building will deter or enhance the instructional program.

The criteria found in this section are categorized according to academic learning, specialized learning and support space. The quality as well as the quantity of the space in the school is a major focus in the analysis of facility adequacy.

5.1 Size of academic learning areas meets minimum standard specifications. (10)

Standards for the size of academic learning areas vary from state to state. Some states mandate minimums, others provide recommendations. There are no national standards. The allocation of space for academic areas seems to have evolved from practice rather than from a sound research base.

Academic classrooms are those used for basic subject fields, such as social studies, mathematics and English. Usually such classrooms are designed for 20-30 students. Somewhat surprising in school design is the practice of reducing the size of the room as the student becomes more mature. Young children have need for more movement within classrooms, especially since they tend to spend more of their instructional time in one room.

In an academic classroom regardless of the age of the student, the per student square footage allowance is usually 25-30. When the state or the school district determines the numbers of students per class or section, the calculation of room size is easily determined. The following represent generally accepted room sizes:

Suggested Classroom Size	Low	Medium	High
Kindergarten (and Pre K.)	900	1050	1200
Elementary School	700	800	900
Middle School	650	750	850
High School	600	700	800

Schools designed with the "open space" concept as an educational philosophy tend to provide instructional spaces that do not coincide with the above standards. For those schools the square footage standard for a per student calculation is applicable.

5.2 Learning areas are located near related educational activities. (10) See criteria for 5.3.

5.3 Academic learning areas are situated away from noisy areas such as cafeterias and gyms. (10)

These two criteria are closely related. The first considers the practical convenience of a building design that brings related instructional areas into nearby space. Those criteria aiding students and faculty in keeping appropriate space in close proximity are especially important in making the facility efficient. The noise factor is considered in the second criteria. These factors are reflected in the space relationships given in the following:

Educational Facility Space Relationships

	Space	Near To	Isolated From
1.	Administration	Main Entrance Health Suite	Teachers' Workroom Music Shops Gymnasium Athletics

	Space	Near To	Isolated From
2.	Art	Industrial Arts Photography	
3.	Athletic Fields	Gymnasium Parking Lots Street Access	Academic Classrooms
4.	Auditorium	Street Access Parking Lot 2nd Major Entrance Music	Gymnasium
5.	Book Storage	Administration Academic Classrooms	General Storage Custodial Storage
6.	Cafeteria	Major Entrance Academic Classrooms Storage and Receiving	
7.	Classrooms	Central Area Library	Music Shops
8.	Commercial Program	Administration	Academic Classrooms
9.	Commons (student)	Main Entrance Administration Library Academic Classrooms Rear and Side Entrances Cafeteria Auditorium	Shops
10.	Custodial Workroom	Utilities Storage	Classrooms
11.	Custodian Storage (decentralized)	Storage and Receiving	Food Service Main Entrance
12.	Conference Rooms	Administration Guidance Teacher's Lounge Academic Clusters	Laboratories Shops Music Cafeteria
13.	Driveways	Administration Main Entrance Storage and Receiving Music Auditorium Cafeteria Athletic Fields	Play Areas
14.	Guidance	Administration Main Entrance	Direct Access to Administration
15.	Health Services	Administration Main Entrance	Guidance
16.	Homemaking	Art Student Commons	Food Service Gymnasium

	Space	Near To	Isolated From
17.	Industrial Arts	Art	Vocational Shops Auditorium Music Administration
18.	Kindergarten	Separate Play Area Driveway Restrooms Storage Cafeteria	Other Classrooms
19.	Kitchen (Cafeteria)	Storage	Auditorium
20.	Library	Academic Classrooms Exterior Entrance	Shops Music Auditorium Gymnasium
21.	Music	Auditorium Art Homemaking	Academic Classrooms Administration
22.	Main Entrance	Access Streets Parking Administration	Storage and Receiving Shops
23.	Parking	Maintenance Auditorium Gymnasium Athletic Fields	Playgrounds
24.	Restrooms	Classrooms Playgrounds Public Areas	
25.	Science	Labs Growing Areas Nature Walks	Food Service Commons Library Auditorium
26.	Service (utilities)	Access Drives Storage and Receiving	All Instructional Areas Playgrounds
27.	Shops (vocational)	Athletic Areas Agricultural Land Storage and Receiving	Academic Areas Other Buildings
28.	Storage	All Instructional Non-Instructional Service	Main Entrance
29.	Teachers' Lounge	Related Instruction Work Area	Administration Guidance

5.4 Storage for student materials is adequate. (5)

Students have at least two different needs for storage. Depending upon the climate and the season, wearing apparel must be accommodated. For all except the very young student, metal lockers located in the corridors will adequately serve this need. Lockers may be wall recessed or located in locker pools (clusters). Regardless of the type

of installation, the sufficiency of size and number is an important factor. Convenience of location is also a consideration. For most students (those in a departmentalized instructional program) lockers will also accommodate books and materials, the second type of storage required. In home room situations, student desks will serve for most individual belongings. Cupboards, cabinets and drawers are often needed in classrooms to store project materials which cannot easily be taken from the room.

5.5 Storage for teacher materials is adequate. (5)

The storage of personal belongings of the teacher necessitates a wardrobe or cabinet of sufficient height to accommodate a full-length coat. Shelves are also very essential. This storage area should have a lock to assure protection for items kept there. In some larger secondary schools, department office storage provides desirable space to take care of teacher needs.

In addition, each classroom should have book and paper supply storage sufficient to keep the materials for the specific teaching station. Seldom does a classroom truly have enough storage space. Teachers generally express a need for more such space.

5.6 Design of learning areas is compatible with instruction need. (10)

Schools designed specifically for the program offered usually provide space that at least serves reasonably well. Occasionally rooms may be odd-shaped, long and narrow, or with alcoves which may be unsuited for regular instructional needs. The problem referenced here more often occurs in old obsolete buildings or in buildings used originally at an instructional level and then transformed, with a minimum of modification, for use at a different level. High schools, after many years of use, sometimes are converted to elementary or junior high schools, so as to permit the construction of a new high school. Such a conversion often results in a building with space inappropriate for the current program.

5.7 Special learning area(s) meets minimum standards for size. (10)

In special learning areas, it is essential to determine the typical class size for the specific program. The instructional areas to be considered here include but are not limited to: remedial classes, speech and journalism, special education, computer laboratories, in-school suspension, etc.

The general guideline for the allocation of space regardless of grade level is approximately 25-30 square feet per student. For the specialized subject areas (mostly at the secondary level) the following are typical allocations of space on a per student basis:

Suggested Space for Special Learning Areas

Area	Square Footage
Art	45-50
Commercial	
Bookkeeping	25-35
Business Law	25-30
Related Business Education	25-30
Typing	35-40
Crafts	45-50
Industrial Arts	
Shop (min. 1800 sq. ft.)	100-110
Mechanical Drawing	35-40
Language Laboratory	45-50
Library	Elementary Minimum Total Students per Library-900 Secondary Minimum Total Student per Library-1200 Seating Minimum-15% Increase by 30 sq. ft. per seated student as enrollment requires.

Music	
Band (min. 2000 sq. ft.)	40-50
Choir	30-35
Physical Education	
Dressing Rooms	50-60
Health Classrooms	25-30
Science Laboratory	45-50
Special Education	35-45
Auditorium	
Audience Space	10-12 per seated capacity
Stage and Total Auxiliary Space	3750-4800

5.8 Gymnasium (or covered P.E. area) serves the elementary program. [Elementary] (10)

5.8 Gymnasium adequately serves the needs of the middle school program. [Middle School] (10)

5.8 Gymnasium, athletic fields and auxiliary facilities adequately serve the needs of the high school program. [High School] (10)

Physical education should be provided at the elementary level although it is not always mandated. It is assumed the program provides more than supervised play. If appropriate enclosed (interior) space is not available, then an outdoor covered area is acceptable. Sometimes lunchrooms are used as multi-purpose areas including physical education. Such an arrangement is appropriate if sufficient time is provided for class schedules. The tasks of rearrangement of furniture creates an extra workload, however.

Middle school facilities require a gymnasium available for a well-rounded program. Bleachers are not a necessity although if they are available the gym may substitute for an auditorium. Typically, such an arrangement is less than ideal.

At the high school level provision is usually made for physical education and athletics. For these upper grades, the total plant must include shower and dressing rooms, equipment storage space, adequate ventilation, spectator accommodations. Title IX requirements now stress the adequacy of girls' facilities comparable in size and convenience to that provided for boys. See space standards provided under 5.7.

5.9 Library/Resource/Media Center provides appropriate and attractive space. (10)

This space may be given a variety of names. Some schools accommodate media in the same area with library materials, thus creating an instructional materials center. Whether these needs are combined or met separately, adequacy is significant. Accreditation standards usually refer very specifically to this portion of the school with an emphasis on available seating and work space for 10-15% of the student body. Design and decor are a major factor in this area. Even in schools with limited carpeting, the library is often treated with this floor covering. Storage and workspace for repair and cataloging is essential for an adequate center. See space standards under 5.7.

5.10 The music program is provided separate storage and sound treated instrumental space. (10)

Music programs are now universally accepted at all grade levels. Although in some elementary schools, the music teacher brings the program to the homeroom, separate space is highly desirable. Storage is an important factor for vocal music but becomes an increasing demand in the middle and high school instrumental programs. Partial acoustical treatment of walls and/or ceilings is necessary for quality instruction and also to avoid transmission of sound to other areas of the building. Tiered construction of space eliminates the need for portable risers. Separate rooms for vocal and instrumental programs are usually necessary except in schools with small enrollments. See space standards under 5.7.

5.11 Prekindergarten and kindergarten programs are in space appropriate for the nature of instruction and age of students. [Elementary] (10)

Too often as kindergarten programs and those for four-year-olds are initiated, a regular elementary classroom is provided. This amount of space is insufficient usually for the amount of activity necessary for children of this age. Some open space, informal alcoves, and arrangements for quiet time are needed. Large play apparatus takes space and extra materials storage is essential. Direct access to fenced play area is important. Usually restroom space separate

from that used by the older students is provided. Carpeted floors help to create a pleasant environment and aids in effective use of the floor space.

5.11 Science laboratories provide sufficient space and are appropriately equipped. [Middle School] (10)

Although not typically found at the elementary levels, science rooms and laboratories are essential for the middle school and high school. Middle school science can be effectively taught in space equivalent to a typical classroom, but demonstration space is needed, along with equipment storage and adequate utility services. Electrical outlets, wash sinks and gas service for burners are necessary. Limited space for student experiments is helpful.

5.11 Science laboratories provide sufficient space for group instruction, individual experiments, and adequate locked storage. [High School] (10)

At the high school level science laboratories are usually provided for life sciences as well as the physical sciences. Usually these programs are housed in adjacent space with connecting storage and lab set-up space. Special attention needs to be given to the security of toxic and inflammable chemicals. Locked storage is a must. It is essential that a shower facility and an eye-wash sink be provided for emergency use in case of accidents involving acid or other highly toxic materials. See space standards under 5.7.

5.12 Appropriate space is provided for small groups and/or individual instruction and remedial programs. [Elementary] (10)

There is a tendency for elementary schools to allocate all or most of its instructional space to typical classrooms. As instruction has become more oriented to small groups and individuals, a great variety of space sizes have become necessary. Therefore, one should expect to find appropriate space for such educational activities as remedial reading, speech correction, federal title programs, etc. Such instructional activities should not be relegated to corridors, libraries, stages and boiler rooms.

5.12 The space for art is sufficient to accommodate the program and equipment [Middle School] (10) [High School] (5)

The art program is treated separately from elementary here since it often is provided in regular classrooms at that level. The difference in scoring between the middle school and high school is a reflection of program balance. Because of the much more diversified high school program, art is given lesser weight at that level.

The space for the art program should accommodate either individual or small group table space. Lighting should provide greater illumination than in most other instructional space, and provision for natural light with a northern exposure is highly desirable. Direct access to out-of-doors is especially desirable. Access to water and sinks is necessary. Storage for supplies and ongoing projects is critical in art rooms. Square footage per student is in the 45-50 range.

5.13 Storage space for student materials in special learning areas is adequate. (5)

See criteria for 5.14.

5.14 Storage space for teacher materials in special learning areas is adequate. (5)

In special learning areas, storage for student and teacher materials can be critical because the amount of materials tends to be more extensive than in the regular academic subjects. The adequacy of storage assumes that in most of the special learning areas that both open and closed shelving will be found and where necessary that appropriate security will be provided. See information provided in 5.4 and 5.5.

5.15 Design of learning areas is compatible with instructional need. (10)

See information provided in 5.6.

5.16 Chalkboards, fixed projection screen and display areas are easily visible. [Elementary and Middle School] (5)

In the elementary school and to some extent in the middle school, chalkboards are essential. Although academic rooms will typically have chalkboards appropriately provided, the special learning areas may be deficient in

this respect. Where the seating (or work area) is sometimes less conventional in arrangement, chalkboards may be entirely lacking or located in areas difficult to see. Usually portable chalkboards are a poor substitute for permanent boards.

Some special problems may occur in open space areas regarding boards and projection screens. The adequacy of these instructional tools are important wherever group teaching is used.

5.16 Vocational programs are housed in space that meets standards. [High School] (5)

The above referenced information is important at the high school level and should be noted. In order to give attention to other critical needs, weight for boards and screens is not given to the upper school. Vocational programs, such as agriculture, wood shop, metal shop, automotive repair and homemaking are therefore included here. The general adequacy of the space for each program is important. Federal standards may apply wherever federal funding is provided. Otherwise the following indicate space allowances:

Suggested Space for Vocational Program Areas

Area	Square Footage
Vocational	
Agriculture	
Shop (min. 1800 sq. ft.)	100-110
Classroom	25-30
Automechanics	
Shop (min. 2500 sq. ft.)	150
Cosmetology Laboratory	90
Distributive Education	30-40
Homemaking	
Clothing	40-50
Foods	40-50
Industrial Cooperative	
Training	25-30

5.17 Administrative offices provide the administrative personnel with sufficient work space and privacy. (10)

These offices will usually comprise at least a principal's office and secretary's reception area. For larger schools, space for 1-3 assistant principals and clerical personnel should be provided. A conference area, supply storage, restroom(s) and records storage may require specific assigned space. The administrative suite should be attractive and well-lighted. The suits should assure that adequate privacy is provided for all personnel for student and parent consultation. Usually the administrative space is located near the main entrance to the building. In larger schools, a decentalized staffing arrangement may necessitate the space be assigned in several locations throughout the building.

These allocations of space may be helpful:

Area	Square Footage
Principal's Office	200-250
Asst. Principal's Office	150-200
Reception-Elementary/Middle School	200-250
Reception-High School	300-350
Storage	75-100
Vault	50-75
Clerk	100-150
Conference Rooms	250-300

5.18 Suitable reception area for students, teachers and visitors is available. (5)

In addition to reception areas referenced in 5.17, there is need for a lobby or foyer in the administrative area. This permits those entering or leaving the administrative area to avoid the heavy student traffic during the passing of classes. A minimum of 200 square feet should be provided with increased amounts according to school enrollments.

5.19 Ample and conveniently located storage includes secure place for permanent records. (5)

A fire-proof vault is essential for the purpose of storage of permanent student and personnel records. This space should be in the general administration area. The suggested square footage for a vault is 50-75 feet. In larger schools a larger walk-in vault is desirable as a secure place for cash and special equipment that require security.

5.20 Cafeteria/cafetorium is attractive with sufficient space for service delivery, storage and food preparation. (10)

At the elementary level the cafeteria may serve as a multi-purpose facility cafetorium. In all schools effort is needed to create a non-institutional environment. Most areas will be more inviting if the walls, ceiling and floor provide a well decorated effect. Color and arrangement of tables in the dining area will make a great difference in the creation of a desirable atmosphere. Where possible some exterior dining space creates a pleasant setting during mild weather. A variation in size and shape of tables is beneficial.

Serving areas need to be carefully designed for sufficient space and to preclude crossing or overlapping of student lines. Food preparation space needs to be large enough to accommodate the type of meals and the number of kitchen personnel. Convenience is a major factor; it is not unusual to find food preparation areas designed with too much space. Restroom facilities with handwashing accommodations are a general requirement for all kitchen help. The design of return trays arrangements is an important consideration.

These standards are suggested:

Area	Square Footage
Kitchen	2 sq. ft. per meal served
Serving	0.5-0.8 sq. ft. per capacity of dining area
Dining	10-14 per seated student

5.21 Clinic area is near administrative offices and is equipped to meet elementary requirements. [Elementary School] (5)

Clinic area is near administrative offices and is equipped to meet middle school requirements . [Middle School] (5)

Clinic area is near administrative offices and is equipped to meet high school requirements. [High School] (5)

The clinic (health suite) regardless of institutional level is typically located near the principal's (or other administrative) office. This is especially appropriate in a school with a modest enrollment where diversified personnel are usually not available. Restrooms, water and privacy are all essential. The following suggestions refer to space allocations.

Area	Square Footage
Total Suite – Elementary and Middle School	500-550
High School	
Office (nurse)	150-175
Exam Room	275-300
Waiting Room	100-150
Rest Area (separate by sex)	100-150
Restrooms	30-40

5.22 Teacher's lounge and work area provides teachers a place for rest and preparation. (10)

Sometimes the space for teachers' lounge and work is two separate areas but often it is a combined single space. In some traditional school systems, the name lounge is avoided since there is a belief that teachers need a work room but not a lounge. This space should be well furnished with comfortable lounge furniture, preferably for

coffee and snacks. Microwave equipment is no longer a luxury. In a separate room or a large combined area, table space and copy equipment are necessary.

In a large school, several smaller teacher areas may be more convenient. Restroom facilities for both men and women teachers should be available preferably with entrances separate from but adjacent to the lounge.

This total area requires about 500-1000 square feet for each 25 teachers.

5.23 Counselor's office insures privacy and sufficient storage. (5)

This item refers in fact to the school's guidance function. At the elementary level these services may be on a part-time basis but space in the building for student consultation on both individual and small group basis is necessary. For the middle and high schools such space is needed for full-time personnel. A modest reception area and one or more counselor's offices will be essential. A conference room and storage for materials and supplies complete the requirements. Suggested space needed is:

Area	Square Footage
Reception	100-200
Counselor's Office–one or more	120-150
Conference Room	125-150
Individual Testing room	40-50
Storage	30-40

5.24 Clothing/book areas are of sufficient size and number to serve student needs. (5)

These areas may be in classrooms for the younger elementary children. For all others this need is usually met with corridor lockers. Metal lockers are typical; occasionally wooden lockers may have been furnished by a local supplier. Anything less than a full-length locker will not adequately accommodate full-length wearing apparel. Usual practice is for two students to share a locker.

5.25 Book room and general storage space near administrative offices are adequate for books, supplies and equipment. (5)

Virtually all schools furnish textbooks. Considerable space is needed under normal conditions. Book racks mounted on tracks can save much space since access can be provided by opening the rows at the appropriate places and then closing the space afterwards. Consumable supplies also require enough space to house annual shipments. A minimum of 100-200 square feet are needed for each wing or floor of the school.

5.26 Student activity area permits social gathering of students during leisure time. (10)

Learning theory emphasizes the importance of the socializing process in school. Much of this occurs in non-classroom settings. The Commons has become recognized as an important part of the school especially for middle and high school students. Such large areas serve as a place for enabling students to gather, converse, share ideas and to strengthen their identity with the school.

The size of the space needs to be adequate to avoid crowding. Small group benches are desirable and the aesthetics of the area can add greatly to the atmosphere of the building. The Commons is usually centrally located and may be adjacent to the library and/or the cafeteria.

In elementary schools the multi-purpose area often serves the function of a Commons.

APPRAISAL CRITERIA FOR
6.0 ENVIRONMENT FOR EDUCATION

Building environment is the sum total of the factors which affect one's feelings about the facility. Is the first impression of the school as it is approached positive? Does it look inviting to children as well as adults? Is the general appearance inside conducive to learning? In most instances, one's reaction to an environment is derived from a pleasing combination of factors rather than from a variety of discrete items. Since the pleasant or unpleasant reaction to the environment is often psychological, it may require conscious effort to determine the basis for one's feelings. The physical environment of a school includes both exterior as well as interior conditions. Emphasis should be placed on physical comfort, ease of movement and aesthetic qualities.

Some factors considered as part of the educational environment were treated in the structural and mechanical section of this material. Here the relevance is in terms of the effect that the school building has on the educational learning process. In summary, the ultimate test of the quality of the school environment is whether the users (students and teachers) will make use of the building at times when they are not required to be there.

6.1 Overall design is aesthetically pleasing to young children. [Elementary School] (10)

Overall design is aesthetically pleasing to age group served. [Middle School] (10)

Overall design is aesthetically pleasing. [High School] (10)

Note that this item differs for the three types of schools only in terms of the age group served by the school. The design of a school tends to be most pleasing when it merges with the surrounding physical environment. For this reason architects try to "fit" the building to its surroundings.

Elementary schools should be inviting to the young child and therefore massive huge structures are best avoided for this age group. Some single story schools lose their desired image when they are designed with long sprawling wings. For this reason (as well as convenience) larger structures need to be designed with at least some multi-story space for classrooms.

Placement on the site (although perhaps technically part of design) is important to image. The orientation of the building will affect the first reaction particularly as the school is approached. Architects typically avoid placing a parking lot in the front of a school for obvious reasons. Even the elevation of the building is a factor in general appearance. Schools look better when placed at an elevation at least slightly higher than the street.

6.2 Site and building are well landscaped. (10)

Landscaping aids greatly in the appearance of a school. An inner city school may not have a campus or even space for shrubbery around the building but that is a detriment to its appearance.

There are at least three aspects to a school landscape plan. First is the foundation plantings which help to make the building look finished. Second is the trees and shrubs planting in appropriated locations across the campus. Ideally, a parklike appearance provides the desired inviting image. The third factor is the lawn. A well seeded turf with its cool green effect adds greatly to the looks of a campus.

In addition to the effect on the users, a well kept school is a major public relations tool for the school system. Design and care of the exterior appearance pays dividends in many ways.

6.3 Building materials provide attractive color and texture. (5)

Whether the school is constructed of wood, concrete, cement block, or brick, the environment is affected by the type of material and texture. Buildings often include several of the different exterior materials and in this way present a desirable appearance. Color as well as texture affects the way one feels about the structure. Does the building have warmth? Does it in a warm climate present a cooling effect just by its color and texture?

6.4 Entrances are appealing to students of the age and maturity of the students served. (10)

The way in which one gains access to a building affects the attitude toward the building. It is frustrating to be thwarted when trying (especially for the first time) to determine where to enter the school. In many schools, a single main entrance may serve for most or all students. Such an entrance should be appealing and make one "want" to go

inside. For larger schools, many entrances will serve separate portions of the student body and employees. Regardless, every entrance should provide a natural feel for the function it provides.

6.5 Entrances and walkways are sheltered from sun and inclement weather. (10)

Protection from the elements is essential at public buildings and especially at schools. Waiting for a building to open and/or waiting for buses necessitates shelter from precipitation in most parts of the country. In the Sun Belt it is also helpful to have covered walkways for shade. These features complement the building and provide convenience for the users. A building that serves the public will also present a more favorable environment if entrances include roofed sections over the entranceway.

6.6 Interior stairways and ramps have handrails that meet code requirements. (5)

Although this item reflects a special need for the handicapped, it should be remembered that many students and adults find a building more convenient if the personal needs of all people are met. For this reason, schools should provide sturdy rails on all stairs and ramps. The special standards for these environmental as well as mandated features can be found in the barrier-free material in the Appendix.

6.7 Movement areas permit ease and control of traffic areas. (10)

The interior environment will be greatly enhanced with a feeling of openness. This does not necessarily require an open concept design, although the benefits from such schools add much to the psychological environment. Corridors should be conveniently wide and should lead to commons or other areas where the student can find relief from the "egg crate" feeling of the very conventional buildings found in many school districts. In addition to the ease of movement in the building, there are times when administrators need to control access to certain areas. Every school, except perhaps the very small, needs to have corridor gates or barricades. From a users view, such arrangements easily communicate which sections of the building are open at any specific time. Such arrangements are especially helpful during community use of the school.

6.8 Areas for students to congregate are suitable to the age group. [Elementary and Middle School] (10)

Commons area provides ample space for student movement and accommodations for sitting as well as standing. [High School] (10)

The emphasis here is on quality of space. The need for this space has been justified elsewhere. The space needs to be appropriately furnished and decorated. Places to sit and converse are essential. Fixed benches and some group settings of furniture help to create a pleasing environment. Plantings of greenery can produce a desirable effect. Painting and lighting are factors to be considered in evaluating this space.

6.9 Large group areas are designed for effective control of young children. [Elementary] (10)

Large group areas are designed for effective management of middle school children. [Middle School] (10)

Large group areas are designed for effective student control. [High School] (10)

The large group areas referred to are those used for instruction, such as gymnasiums, auditoriums, multi-purpose rooms, music rooms and libraries. These areas should be designed for visual supervision of students. Narrow hallways, alcoves, visual barriers and partial walls may deter the teaching function and lead to student misconduct.

The use of carpeting in large group areas tends to inhibit sound and adds to the decor. Even in non-music areas some provision for sound control creates a more pleasant environment. Convenient locations of light switches and outlets permit more convenient use of this space.

6.10 There is provision for year around comfortable temperature throughout the building. (15)

The learning environment reflects increased quality if the temperature is properly maintained. Teachers in general express dissatisfaction with the heating and cooling of their buildings. Any time that one is conscious of the room temperature it is probably not adequate at least for the needs of that specific individual. Therein lies the problem–the considerable range of individual assessment of temperature.

Heating and cooling systems often are not properly balanced throughout the building. Often the room or zone controls are not made accessible to teachers or the thermostat provided does not actually control anything.

Many classrooms become overheated by the release of body heat from the occupants and/or the absorption of solar heat during the day. Building orientation and roof deck overhang may greatly affect this condition. Although air-conditioning (climate control) is becoming common in newer schools, most older schools throughout the country do not have air-conditioning. Research in education has contributed little to the justification for this feature. Quality environment, however, is generally difficult to assure without a means of keeping classrooms at an acceptable temperature.

6.11 Ventilating system provides adequate circulation of clean air. (15)

Often the lack of ventilation rather than the temperature is the source of the problem relating to room comfort. Experts claim that a minimum of 10-15 cubic feet of fresh air per student per minute is adequate for the normal classroom. Some special areas, such as shower rooms, need greater amounts of ventilation to reduce the excess moisture in the air.

Mechanical systems present two types of problems. Air filters require regular maintenance. Air circulation is impeded if filters become clogged from dirt. The ventilating system also may be unduly noisy to the extent that instruction is hindered . Ventilating fans in large areas may be extremely noisy to the extent that use of such areas for assemblies is made difficult.

6.12 Fenestration contributes to a pleasant environment. (10)

The design of windows in schools is a topic of much discussion. Are windowless schools desirable or is instruction inhibited by loss of visual contact with the outside? Windows in schools increase the costs, in terms of construction and maintenance. However, most individuals, teachers and students, state a preference for some use of windows. The lack of windows makes it almost a necessity to close school anytime there is an extended power failure. At least one state, recently enacted a law requiring operable windows in all new classrooms.

The intent here is not to accept any one solution to this controversy but to acknowledge that the potential for a quality educational environment is increased with at least a minimal visual strip for each instructional space. The way in which the building design provides for appropriate fenestration is a significant factor.

6.13 Lighting system provides proper intensity, diffusion and distribution of illumination. (15)

The lighting of a room is a very important factor in the way one feels about the environment. Item 2.15 addresses the light fixtures and the appropriate quality of illumination needed for various instructional settings. Consideration needs to be given also to other aspects of the lighting. Intensity refers to the degree of brightness emitted by the illuminaire. Diffusion is rated to the manner in which the light is reflected by ceiling or sidewalls. Distribution evolves from how well the fixtures provide light in equal quantities to all areas of the room.

It has been shown through research in Arkansas and Alberta, Canada that the behavior of students is affected to the type of fluorescent lights. Cool white fluorescent for a protracted length of time tends to make students lethargic. Full spectrum fluorescent tubes tends to improve the behavior of children. The educational environment is influenced by the lighting provided in the instructional areas.

6.14 Acoustical treatment of ceiling, walls and floors provides effective sound control. (10)

Whether the instructional space is a regular classroom, an auditorium, or music room, the area will be more effective for teaching and learning if reasonable effort is made to control the sound. For the ceilings the treatment usually is acoustical plaster or acoustical tile. In special areas additional treatment may be needed. The sidewalls can be made to reduce sound through the use of draperies, small areas of acoustical tile, or other materials that decrease the amount of reverberation.

Floors are made highly sound absorbent through the use of carpet. This type of floor covering probably does more to improve the acoustics in the room than any other sound control material. At the same time the visual environment is also greatly improved.

6.15 Exterior noise is not a distraction in the classrooms. (10)

Careful selection of the school site may be the greatest factor in the reduction of exterior noise in the

classroom. Avoidance of airports, expressways and heavy industry will be profitable over the years. When conditions necessitate such locations, special efforts should be made to reduce the exterior noise in the building. A reduction in the amount of fenestration will help. In fact, openings of any kind in the building envelope will result in noise pollution inside the building. Exterior doors with closers that operate well can make some difference. The learning environment will exist at a greater quality level if exterior noise can be avoided or at least minimized.

6.16 Color schemes, building materials and decor provide an impetus to learning. (20)

There is considerable research showing that the color has a very definite effect on the occupants of a room. Such conclusions are especially relevant to educational settings. A feeling of warmth results from the use of red, yellow, orange and rich brown in furnishings. A room can be made to create a cool feeling through a decor emphasizing blue, green, pale neutrals and white. The warm colors tend to foster relaxation while the cool colors produce increased activity.

The lines and shapes of furniture and equipment also have an effect on the environment. Even the way in which furnishings are grouped leads to differences in psychological reactions.

Many new schools use graphics and bold designs on large wall areas because these features are well accepted by young people.

6.17 Furniture and equipment provide a pleasing atmosphere. (10)

This item is addressed in part in 6.16. In addition to the previous comments, a pleasing atmosphere is important in the context of the specific student group. For younger children large display areas can be important. Such areas often are provided as bulletin boards to which student work can be attached. Sometimes large wall sections can be covered with vinyl, burlap or carpet to create convenient colorful pin-up display areas.

For older students display cases are widely used. Sometimes these are associated with subject areas with access within the classroom for arrangement. Viewing is typically from a corridor.

It is important that the scale (size) of the furnishings be consistent with the age group. Small children who see only the lower portion of the school environment can be overwhelmed by large objects designed for the adult world. High school students are adults (or nearly so) and wish their environment to reflect objects on that scale.

6.18 Drinking fountains and restrooms facilities are conveniently located. (15)

Standards for these necessities are given in 2.17. Here the emphasis is on the way in which drinking fountains and restrooms aid the environment. These very functional needs are obviously best planned when location is given major consideration. These services should be available to students and faculty on each floor of the building. Large group areas should always have these services nearby. Schools with extended wings need water and restrooms available. Separate structures should be provided with these conveniences.

Location in terms of distances is an important aspect. However, the environment can be made pleasing when these facilities can be easily found. Some authorities contend that buildings should reflect a natural order of things so that occupants (and especially first time visitors) will be led by their own logic to the location of these services.

BARRIER-FREENESS IN EDUCATIONAL FACILITIES

Barrier-Freeness in an educational facility is a characteristic which allows physical accessibility to all educational programs for all persons regardless of physical or mental disabilities. This characteristic is required by law for every educational facility in the United States. Stated another way, it means that no person with any physical or mental disability can be deprived the right of any educational privilege afforded anyone else because of physical obstructions designed or placed between them and the program.

Persons with both physical and mental disabilities have existed in every society since the very beginning. They have been treated in various ways including extermination and exiling. They have been ignored, scorned and isolated. Historically, the disabled have been segregated and as much distance as possible has been put between them and the rest of society. Only such physical and mental barriers make a disabled person handicapped.

The chance to put the disabled in the mainstream may have come through education or possibly a guilt complex which whispered quietly, "It could just as easily have been me!" Perhaps it came though the civil rights and human rights movements, or medical science progress which kept alive many of the disabled war veterans who have so much to protect the society's freedoms. It has taken many centuries but finally the disabled have been given the avenues to fully participate in their own society.

LEGAL REQUIREMENTS

All elements of society, however, have not universally "opened their doors" to disabled persons with the same enthusiasm. To further the process of bringing the disabled back into society, a vast spectra of legal machinery has been created. Its main purpose is the removing of physical barriers which have, in the past, prevented disabled persons from gaining access to those public and private facilities which are necessary for leading a normal life. Thus far, these laws have been inadequately enforced in some sectors.

Legal mandates can be found in Public Law (PL) 90-480, "An Act to Ensure that Certain Buildings, Financed with Federal Funds are so Designed and Constructed as to be Accessible to the Handicapped;" and for Education specifically, PL 93-112, "The Rehabilitation Act of 1973;" and in PL 94-142, "The Education for All Handicapped Children Act of 1975." For those whose interest is specifically in Educational Facilities, Sections 502 and 504 of PL 93-112 is of the greatest concern. Section 502 established the Architecture and Transportation Barriers Compliance Board, and Section 504 established the guidelines and timetables for compliance. Thorough knowledge of each of these laws is mandatory for the administrators of any school, college or vocational training center, including those not receiving direct or indirect federal assistance, even though the latter is exempted through the law.

For those covered, failure to meet the anti-discrimination requirements could result in withdrawal of federal funding. Although this element is grossly unenforced at present, changes loom on the horizon.

It must be understood that these laws were established as "Model Laws" rather than "Criminal Laws," meaning that they were designed to influence society to accept standards and to surpass written requirements rather than simply comply or be punished. With such model laws, the only punishment available is the withholding of certain federal monies otherwise freely given. While the intent is honorable, such situations often create resistance due to disdain for the "Big Brother" syndrome accredited the federal government.

IMPORTANCE OF COMPLIANCE

According to estimates made in 1978, and presented in Your Responsibilities to Disabled Persons As A School Or College Administrator, at least twenty-eight million disabled American adults were excluded from participating in professional education careers for which they were fully capable of entering had physical and mental barriers not existed. In addition, more than half of the eight million disabled children were not receiving an appropriate education to which they were entitled. It was also estimated that as many as one million disabled children were not even in school.

The Department of Health, Education and Welfare (HEW) reported in Barrier Free Site Design that in 1960 thirty million Americans had physical disabilities which seriously limited their full and free use of the environment.

At the present, the best estimates are that somewhere between thirty-five and fifty million Americans have either physical or mental disabilities and due to the barriers, mostly physical, that exist in public facilities they are not able to participate in many of life's activities enjoyed by those who are not disabled.

The intent of Section 504 is much more far reaching than simply requiring administrators to provide a ramp near the front door of a school building. Many principals report that their facility is in compliance because there are no disabled students in attendance. The error in such logic includes such factors as:

1. Disabled students cannot attend due to existing barriers,

2. Students may chose to not participate in many programs due to disabled parents or guardians inability to become involved in associated functions, and

3. Potential teachers and auxiliary personnel who are disabled do not apply for positions due to known barriers.

No caring administrator should attempt to bypass the intent of this legal mandate. With the utmost speed possible, every attempt should be made to remove all barriers blocking each educational program. Lack of money is no more an acceptable excuse today than it has been in previous years. After all, programs have been made available to the nondisabled, therefore they can be made available to the disabled.

PROBLEMS OF COMPLIANCE

We would be remiss to fail to identify the programs which exist in attempting to comply with the above mentioned laws. Just as lack of money cannot be used as an excuse, availability of money will not insure total compliance. There are a few provisions inherent in the mandates that simply cannot be met with current technology. Most of them fall in the general category of communications, specifically signs and signals. Some persons with physical or mental disabilities simply cannot comprehend the best available fire alarm signals and exit signs. Persons with multiple disabilities, such as both blindness and deafness are still unreachable even with fire alarms which also include flashing lights. Additional sensory devices must be combined to the best now available. Persons identified as having dyslexia have trouble understanding the information contained on an "exit" sign including the direction of the arrow and the word itself.

Perhaps the greatest programmatic barrier exists in passive communications. Posters and bulletin boards provide valuable information for the sighted without direct intervention into their daily activities. An example would be a brightly colored and illustrated bulletin board near the entrance of the school announcing the arrival of this year's SCHOOL ANNUAL and enticing students to purchase same by Wednesday of this week. Such information is not available to persons who are blind or have severe visual impairment. Such problems have no simple solution at the present, however, this should not be taken as a license to ignore requirements that can be met.

Another major problem facing district administrators is the conflict between provisions of PL 94-142 which require students to be placed in the "least restrictive environment" and a currently accepted procedure of providing at least one barrier-free elementary school, middle school and senior high school per district. While the latter is acceptable to many disabled persons for the present, this situation is not in legal compliance and enforcement of the former provisions can be expected at any time.

RESPONSIBILITIES OF THE ADMINISTRATOR

Although not specifically stated in most job descriptions, both district-level and building-level administrators have the following responsibilities in upholding federal laws regarding the rights of the disabled persons with whom they are or may become associated:

1. Administrators must understand the laws related to the disabled in both content and intent.

2. All possible physical and mental disabilities must be identified.

3. All existing educational facilities must be evaluated and physical barriers must be identified.

4. All physical barriers which prevent disabled persons the opportunity of full participation in any educational program to which they are entitled must be removed.

EVALUATION

One of the most difficult and time consuming responsibilities associated with barrier-freeness legislation for the administrator is the process of evaluating all existing educational facilities. Once all the required criteria is studied and understood, the administrator or a designated expert must make a thorough investigation to determine where

existing barriers lie and to determine procedures that must be taken to affect their removal. At the same time, a percentage level of compliance for each facility can be established that will aid both building and district-level officials in setting priorities for improvement.

The Department of Health, Education and Welfare, in the pamphlet, Your Responsibilities To Disabled Persons As A School Or College Administrator identified nine categories and twenty-four specific areas which must be evaluated. They are shown in the following chart.

BARRIER-FREENESS EVALUATION

These are the basic categories that should be examined in performing an evaluation:

Site Considerations
- Parking Space
- Curb Cuts
- Sidewalks

Doors
- Width
- Opening Pressure
- Threshold

Floors and Halls
- Width
- Surface Covering
- Obstructions and Hazards

Operating Mechanisms and Controls
- Height
- Ease of Manipulations

Water Fountains
- Height
- Controls

Changes In Levels
- Ramps
- Elevators
- Lifts

Rest Rooms
- Location
- Size
- Stall Width and Depth
- Grab Bars

Seating
- Space for Wheelchairs
- Traffic Circulation

Telephones
- Height
- Volume Control

Each of the subcategories may contain several individual criterion which must be evaluated.

Another document entitled BARRIER-FREENESS IN EDUCATIONAL FACILITIES is a complete evaluation guide for evaluating individual facilities for compliance with Section 504. It contains six categories and seventy-seven subcategories which spell out every requirement contained in the law, such as the specific requirements for elevators, etc. This evaluation guide, similar to the GUIDE FOR SCHOOL FACILITY APPRAISAL, may be obtained by contacting the authors.

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ASBESTOS IN THE SCHOOLS

Asbestos might best be described as a dilemma in the world of building construction and use. It is one of the most efficient and affordable insulating materials known. It is a mineral found in many rock formations. When separated from rock, asbestos becomes a fluffy, fibrous material. Asbestos has many uses, almost 3000 in all, including nose cones for rockets. A booklet published by Channing L. Bete Co., Inc. of Greenfield, Mass. in cooperation with the National Institute for Occupational Safety and Health, (NIOSH) entitled, Caution: Asbestos Dust is Hazardous to Your Health describes the three most common types of asbestos as chrysotile, amosite and crocidolite. Chrysotile represents 90% of all processed asbestos. This form resists heat but not acid, and can easily be spun into asbestos cloth to be used by firefighters, as protection against possible fires, and as insulation and sealants in close proximity to extreme heat and open fires. The textile industry has produced fireproof clothing and stage curtains. Amosite is both heat and acid resistant. It is used in bulk form for insulation and can be molded into pipe insulation. This was the type most commonly used in school construction. The construction industry uses about two thirds of all asbestos produced. Crocidolite is a poor heat insulator but is highly resistant to acid. It has been used to make acid-resistant cement pipe and electric battery cases. The automotive industry has found this material useful in brake and clutch linings and as undercoatings . (Channing L. Bete, 1973)

The dilemma has been brought about by the fact that although this practically a "wonder fiber," IT KILLS AND DISABLES PEOPLE. Exposure to asbestos dust allows the small, sharp fibers to work into the lung tissue when inhaled. Skin problems are caused when asbestos fibers penetrate the skin.

BACKGROUND OF THE ASBESTOS PROBLEM

Asbestos, regarded as a treasure as early as 400 years ago, was used to make fire-proof fabrics for centuries before Christ, and was mentioned by Herodotus as a "cremation cloth" in 450 B.C. Its history has been one of continuous growth in use and growth in usability. This use became serious to education and a concern for educators only recently, when it was used extensively for insulation against heating and cooling and as insulation for pipes throughout many school buildings constructed and renovated during the period from the end of World War II through 1978. The Environmental Protection Agency (EPA) prohibited the use of spray application for nearly all fireproofing and insulation in 1973 and spray application for nearly all uses was prohibited in 1978. Asbestos used to insulate boilers and pipes was prohibited by the EPA in 1975. (Huff,1978)

The action was taken 73 years after the first reported death resulting from asbestos dust inhalation in 1900. In 1907, scientists associated asbestos dust exposure and pulmonary disease in the United Kingdom and by 1927 that country produced a complete description of asbestosis. In the United States studies by Selikoff proved that asbestos fibers was related to asbestosis, a chronic and debilitating lung disease twenty years prior to the EPA action. The studies were ignored for many years perhaps because they revealed that the results of exposure were not evident for as much as twenty years which seems less hazardous than immediate dangers such as fire or a rattlesnake loose in the building. Perhaps the findings were shuffled aside by special interest groups or agencies that saw the problem as much too large to tackle when compared to the many positive properties of asbestos and its widespread use. (Huff, 1978).

More recent research has associated asbestos to cancer of the lungs, esophagus, colon and other organs. Most problems caused by asbestos have been related to cigarette smoking and long exposure to high levels of asbestos fibers, however even the EPA has not determined a threshold level of exposure than can be considered "safe."

Legal action has still not caught up with that associated with other known dangers such as cigarette smoking and fast driving, (there are no signs an school house doors stating: "SURGEON GENERAL'S WARNING: Quitting School Now Greatly Reduces Serious Risks to Your Health," nor is there a uniformed EPA official lurking around the corner waiting to issue a citation to school administrators each time they unlock the school's doors.) However, the EPA has targeted public buildings, and school buildings in particular, in the effort to prevent exposure to innocent people. School children occupy potentially hazardous buildings over long periods of time and during their early years while they may be more susceptible to dangers of exposure. In addition, the constant movement within a school building is more likely to keep any fibers that are present airborne where they can do the most harm. Safety and Health Administration (OSHA) regulations are grossly inadequate to protect school children. Section 6(a) of the Toxic Substances Control Act as specified in the EPA regulations only requires school districts to inspect all buildings and analyze all friable materials and, if friable asbestos is found, to inform all employees and maintenance personnel as to its location plus inform the PTA (or parents if there is no such organization) of the presence of friable asbestos. OSHA regulations were established to protect workers in the industrial settings, especially asbestos-related, and to establish procedures for safe removal of friable asbestos from buildings. (Federal Register, 1982)

PROBLEMS OF IDENTIFICATION

Asbestos is a natural mineral and as used in construction is a friable substance consisting of microscopic fibers. The small size of these fibers creates difficulty in its identification. OSHA regulations specified that Phase Contrast Microscopy be used to identify the tiny fibers, while Electron Microscopy is the only method of accurate identification. The human eye alone cannot determine that a friable material is or is not asbestos.

Procedures for identification include carefully collecting a small sample of each friable material in a safe container and sending it to a laboratory with Electron Microscopy capability. Any other method can prove more costly than possible lab fees. There have been several cases where other methods resulted in ignoring major potential problems when erroneous reports indicated samples as not being asbestos. There have been several cases where erroneous identification resulted in expensive removal of materials which were later identified as not being asbestos. The process of examining solid samples has been criticized due to the fact that asbestos does not cause health problems while it is still attached to the ceiling or the pipe. Sampling the airborne fibers seems more logical to many critics.

Airborne fibers can be collected very easily by placing small and inconspicuous air pumps with particular filters attached throughout the school building for several hours (usually eight) and then examining the fibers trapped by the filters. However, the most careful attempts have not produced satisfactory results. EPA Report Number 560/5-83-002 entitled Guidance For Controlling Friable Asbestos-Containing Materials in Buildings presents the difficulty of accurately determining the danger level for occupants by only using this method. The bottom line is that asbestos will eventually become friable and will eventually become airborne and can be inhaled if it is present. The report further states plainly that, "Due to technical problems and high costs, monitoring of airborne asbestos is not recommended for assessment purposes." (EPA, March 1983)

CONTROL OPTIONS

This same report identifies the four control techniques considered acceptable once asbestos has been found in a school building. These techniques include:

1. Removal, disposal and replacement;
2. enclosure;
3. encapsulation; and
4. a special operations, maintenance and reinspection program.

Cautions are issued concerning work area containment and worker protection for all except the latter method. Enclosure and encapsulation also require a continuing program of special operations and periodic reassessment. Enclosure involves the construction of airtight walls and ceilings around surfaces coated with asbestos-containing materials. There are additional restrictions associated with this method. Encapsulation involves spraying asbestos-containing materials with a sealant. Both enclosure and encapsulation represent temporary control measures. Eventually the asbestos must be removed, either when the control measures break down or when the building is demolished.

Removal is by far the most complicated and thus the most expensive control measure. Consequently, school district officials have hedged, balked and refused to select this method. Attempts have been made to recover the cost of removal from the various agencies that require the removal and from the manufacturers of the dangerous material. Some have been successful. According to an article in EDUCATION WEEK entitled "The Asbestos Dilemma," September, 1984, "The federal government has levied fines on 43 school districts nationwide for failing to inspect for asbestos or to notify parents of their findings." To the knowledge of the authors, there has been no litigation against individual school officials or districts related to asbestos injury or death. However, liability may easily be established against administrators and board members who have not brought their schools into compliance and perhaps not even gone farther to insure the safety of the students and employees against the known dangers of asbestos.

ADMINISTRATOR RESPONSIBILITIES

According to present federal laws and regulations, the school district administration is responsible for the complete evaluation of all public buildings including any that serve as the workplace for employees. Any friable substance which might possibly contain asbestos fibers must be identified and samples must be tested in a qualified laboratory which has Electron Microscopy capability. If asbestos fibers exist in the samples, all employees, and

student representive agencies, such as the PTA, must be notified of the presence and location. If such agencies are not available, all parents of students attending the facility in which asbestos was located must be informed of the presence and location. However, since such information does nothing to protect persons who might come in contact with the hazardous material, additional steps should be taken to ensure safety.

The following eight appraisal steps should be taken by anyone responsible for educational facilities. While these steps extend beyond the present legal mandates, they represent the minimum safety criteria for today and for the near future should reasonable stringent requirements be established.

1. Make a thorough search for possible friable asbestos throughout the complete facility.

2. Check to determine that no exposed friable material containing possible asbestos fibers exists on ceilings, walls or floors.

3. Conduct a survey to assure that no unexposed friable material containing possible asbestos exists in or on boilers, pipes, etc.

4. Determine that no unexposed friable material containing possible asbestos exists as attic or roof insulation.

5. Assure that no materials containing possible asbestos fibers exists in shops or maintenance areas for student or employee use.

6. Gather samples of all materials which might contain asbestos fibers and test in a qualified laboratory through electron light microscopy techniques.

7. Determine that all materials containing asbestos fibers have been located and isolated from students, employees and visitors through enclosure, encapsulation or removal.

8. Assure that all students, employees and parents have been informed of the existence and location of asbestos presently in the facility.

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GLOSSARY

ACADEMIC LEARNING AREA- A teaching station incorporating student capacity for instructional activity excluding vocational or extra curricular studies.

ACCESS STREETS-Vehicular traffic area leading directly to the site.

ACOUSTICAL PLASTER-A wall or ceiling covering designed to absorb sound waves.

ALCOVE-A semi-separated area designed for study or counseling.

APPRAISAL-An evaluation of specific components by a knowledgeable person.

BARRIER-FREENESS-A condition in which no physical barriers exist between a disabled person and a federally funded program.

BUILDING ENVELOPE-The facade, or surrounding surface, of a singular structure.

BUILDING ORIENTATION-The manner in which the physical structure is placed on the site so as to take advantage of daylighting, climatic and aesthetic factors.

CAFETORIUM-An area designed to function as both a cafeteria and an auditorium.

CAMPUS-Everything contained within the boundaries of a school site.

CEILING SPRINKLER-The portion of a fire suppression system which releases a spray of water upon the area within a certain conical region below its location.

CERAMIC TILE-A clay product with an impervious, glazed surface designed for long wear and easy cleaning.

CLEAR STORY-A row of glass located immediately beneath the roof line on an external wall which allows natural light to enter the room.

CLIMATE CONTROL-An adjustable electrical or mechanical thermostatic device which interfaces with a heating and/or cooling mechanism initiating or terminating its function.

CLINIC-That portion of a facility which houses health services.

COMMONS-An area designated for informal student gathering.

COMPACT DESIGN-A planning method which produces the highest ratio of internal space per linear foot of external wall.

CORRECT SLOPE-The gradation of a ramp to conform with barrier-free requirements.

CURB CUT-A gentle sloped ramp connecting sidewalks and adjacent parking areas which allows passage of disabled pedestrians.

CUSTODIAL CLOSET-That space designed for storage and service of cleaning equipment and supplies.

DEAD-END CORRIDOR-A hallway with only one direction of egress.

DECOR-The style and layout of interior furnishings.

DEMONSTRATION SPACE-An area in which theoretical concepts can be shown through practical example.

DRAINAGE SYSTEM-Pipe used for the removal of waste water and sewage.

EGG CRATE DESIGN-Layout exemplifying a typical double-loaded corridor, or a single hallway with opposing classrooms.

EGRESS-The act, place or means of going out.

ELEVATION-A measured height above a known level, or a plan showing such height in a building design.

ENERGY MANAGEMENT-The administration of fossil fuel utilization.

ENERGY SOURCE-Origin of usable energy.

ENVIRONMENT-That which surrounds, the elements or the control of the elements.

EPOXY PAINT-A chemical composition containing color pigments which cures with a super hard, impervious surface which is easily cleaned.

EROSION-A physical or chemical removal of existing substances which leaves a rough or scarred surface.

EXFILTRATION-The loss of interior air though openings in the building envelope.

EXPANSION JOINTS-A designed break in ceilings, walls and floors which allows controlled thermodynamic expansion and contraction to occur between solids thus preventing cracking.

FENESTRATION-The arrangement, proportioning and design of windows and doors in a building.

FINGER DESIGN-The layout of a building which includes double-loaded corridors projecting from a central structure to allow balanced natural lighting and ventilation.

FIRE ESCAPE -A planned second egress for emergency purposes.

FIRE RESISTANT-Building materials selected for natural ability to retard combustion.

FIXED PROJECTION SCREEN-A reflective surface designed or permanently placed for visual instruction.

FIXED WINDOWS-Non-movable light transferring wall materials which allow no egress.

FLOOR SCRUBBER-A portable, mechanical device used for cleaning floor surfaces.

FLUORESCENT TUBE-A glass tube containing gasses which glow brightly when charged with an electrical current.

FOOT CANDLE-A measurement of light equal to that emitted by a candle at a distance of one foot.

FORMICA-A surface of laminated plastic products.

FOYER-An entrance hallway or lobby.

FRIABLE ASBESTOS-A natural mineral fiber which can be easily separated from the mother material.

FULL SPECTRUM LIGHTING-A complete dispersion of light energy including all wavelengths.

HEATING UNIT-A mechanical devise which releases and disperses energy from a stored source.

ILLUMINATION-Measurement of light energy.

INFILTRATION-The intrusion of undesirable elements, such as heat, through the building envelope.

INTERNAL HEAT GAIN-Uncontrolled temperature rise caused by sunlight passing through windows, doors or skylight, or from the body heat of building occupants.

JOIST-Structural members which support floors, ceilings and roofs.

LARGE GROUP AREAS-Interior spaces designed to accommodate numbers larger than that of a normal class.

LAVATORY-Restroom or the hand washing facility located within a restroom.

LIGHT METER-A devise to measure the amount of reflected light.

LIGHT SOURCE-The origin of natural or man made light within a facility such as a window, door, skylight, fluorescent tube or incandescent lamp.

LOAD BEARING-Vertical structural member which support ceilings and/or roofs.

LOBBY-That space in a building that serves as an informal gathering area generally located near the main entrance.

MASONRY-Construction utilizing stone, brick or concrete.

MULTI-PURPOSE AREA-Internal space created for several uses such as play, assembly and dining.

NOISE POLLUTION-The infiltration of unwanted or uncontrolled sound at a level above that which is comfortable to the human ear.

NON-INSTITUTIONALIZED ENVIRONMENT-A warm, soft atmosphere created to be comfortable to the human psyche.

OFF-SITE SIDEWALKS-Improved pedestrian traffic areas located adjacent to the school site.

OPEN-SPACE CONCEPT-A spacious, unfettered atmosphere created when individual classrooms are not separated by complete walls.

OPEN WATER-Puddles, ponds and swampy areas on a school site created by uneven elevations and impervious or semi-impervious soils.

OPERABLE WINDOWS-Windows which can be easily opened or closed according to their design.

OUTDOOR LEARNING LABORATORY-External areas which allow teachers and students to enter and study the natural environment.

PANIC BARS-Hardware attached to the inside of external doors which releases the latch when pushed outward.

PANIC HARDWARE-Same as PANIC BARS.

PEDESTRIAN TRAFFIC-The flow or movement of persons on foot or in wheelchairs.

PLANT MAINTAINABILITY-Design features of a facility which aide the cleaning and maintenance functions.

POST-OCCUPANCY REVIEW-A complete audit or evaluation of a facility immediately following its being placed in use to determine the usability and durability.

PRE-FINISHED METAL-Exposed metal, either structure or facade, the surface of which is durable, easily cleaned and attractive.

RAMP-An inclined surface connecting different levels of flow space which allows easy movement by disabled persons.

RECEPTION AREA-(See Lobby)

RECESSED DOORS-Doors openin, into hallways designed so as not to extend into the flow space or impede traffic flow.

RECORDS STORAGE-A fireproof, controlled access area providing safe storage of non-replaceable items such as student permanent records.

REST ROOM-A toilet, sometimes improperly called a lavatory.

SAFETY GLASS-Glass with plastic or wire laminated within to prevent splintering when broken.

SITE UTILIZATION PLAN-A design which allows greatest usage of available space within a facility.

SLAB ON GRADE-A concrete foundation which forms the ground floor and which is not raised appreciably above the surrounding ground level.

SMOKE DETECTOR-An electrical devise which senses the presence of smoke particles in the air and sounds a warning or activates fire extinguishing equipment.

SOLAR HEAT-Heat transferring devise utilizing sunlight as a source of energy.

SOLID SURFACE PARKING-Parking areas with an improved surface to provide natural and easy removal of accumulated dirt, water, snow and ice for cleanliness and safety

SPECIAL LEARNING AREA-Space provided for study of particular topics or by particular audiences.

SPRINKLER SYSTEM-Self-actuated fire extinguishers placed at strategic points throughout the building.

STAIR RISER-Individual stair steps.

STRUCTURAL AND MECHANICAL DESIGN-The strategic selection and placement of support and auxiliary control systems for strength, economy and utilization.

STRUCTURAL SLAB-Concrete floor providing both strength and a barrier.

STUDENT TRAFFIC PATTERN-An area designed primarily as flow space.

STUCCO-A mixture of concrete or plaster used as a covering for interior or exterior walls.

SUSPENDED ACOUSTICAL PANELS-Fiberglass or fibrous materials suspended to form a ceiling designed to absorb sound waves.

TEACHING STATION-Specific locations associated with a learning area designed to provide a support system for instruction.

TERRAZZO-A very hard, impervious floor surface that is long wearing and easily maintained.

TOPOGRAPHY-The distinctive surface features of the site or surrounding land area.

TOXIC MATERIALS-Substances which are poisonous to humans or animals.

VEHICULAR TRAFFIC-The movement of automobiles or buses on or adjacent to the school site.

VISUAL BARRIER-Walls, furniture, etc. which impedes light or view.

VISUAL STRIP-An area which allows vision or visual control.

WAINSCOT-Interior wood paneling, usually covering the lower three feet of a wall, which differs from the rest of the wall.

WALL GRAPHICS-Pictures, drawings or writing usually painted on wall surfaces.

WATER OUTLET-Faucets or fountains.

ZONE CONTROLS-Barriers which accommodate separation of heating, cooling or lighting facilities.

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ELEMENTARY SCHOOL FORMS

To Be Used In Conjunction With

GUIDE FOR SCHOOL FACILITY APPRAISAL

by

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and

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DIRECTIONS FOR APPRAISING FACILITIES FOR ELEMENTARY SCHOOLS

Prior to evaluating a building, the appraiser should become familiar with the educational program provided within the existing school facility. It is essential also to determine other pertinent factors about the facility which will provide background information sufficient to insure a thorough and accurate appraisal. Particularly helpful are the building's architectural plans, specifications and layout, if these are available. If possible, the school plant should be appraised at a time when school is in session so that the actual use of the building is more apparent.

Although the Appraisal Guide is designed for individual appraiser use, ideally the school plant should be evaluated by three to five appraisers. A comparison and averaging of the several appraisals will result in a better and more objective overall rating.

The instrument uses an additive scoring method, with each item having a maximum number of allowable points. A total of 1000 points is distributed among these six major categories:

Section	Maximum Points
1.0 The School Site	100
2.0 Structural and Mechanical Features	200
3.0 Plant Maintainability	100
4.0 School Building Safety	200
5.0 Educational Adequacy	200
6.0 Environment for Education	200

STEP I - Prior to appraisal: review educational program; identify the number of faculty members and students; and examine the floor and plot plans carefully.

STEP II - Overview of the Building and Grounds. Upon approach to the site look for traffic patterns, school safety signs, neighborhood environment, etc. Begin the appraisal by taking a preliminary tour of the entire building noting both exterior and interior features. Information recorded in the Building Data Record obtained prior to arrival at the campus should be verified. The appraisal weights should not be determined during this initial walk through. The appraisal is better accomplished as separate individual steps in the process. See sample Building Data Record on page E-46.

STEP III - The appraisal is aided by including a floor plan for the school and the approximate location of the building(s) on the site. Attach a furnished copy of a plan or provide a rough drawing similar to that shown on page E-44.

STEP IV - Assignment of Scores. After the completion of the preliminary inspection, go through the entire instrument section by section. The appraisal will, of course, be more accurate if each item is carefully considered while it is appropriately observed. Do not try to evaluate from memory–use actual observation when making the appraisal decision.

Items that are needed (required) but are non-existent should be given a 0 score. If an item is not needed and is non-existent full credit should be allowed.

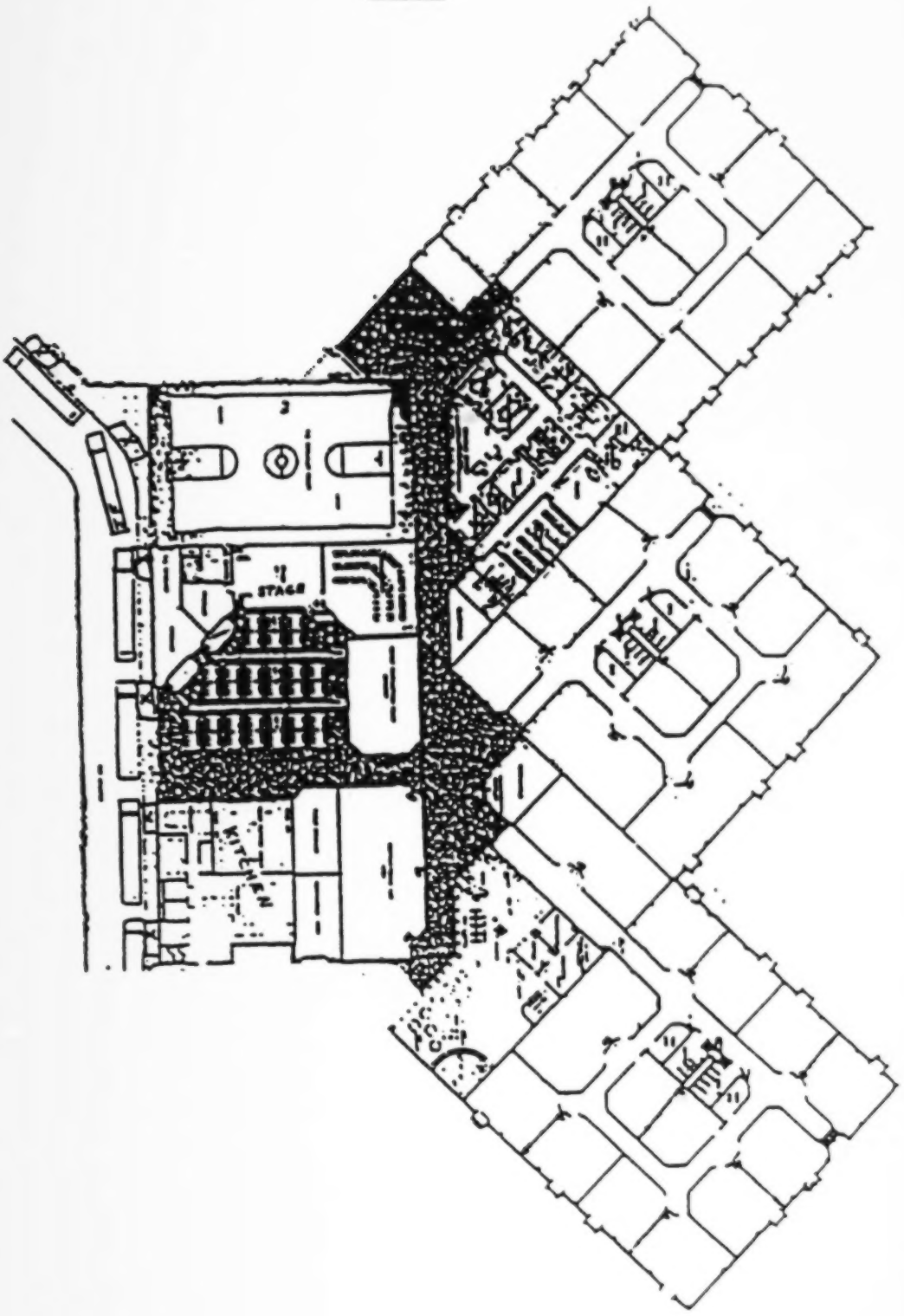
Note the Table of Weights for assistance in determining the score to be given each item. Each item should be considered in the following terms: Non-Existent, Very Inadequate, Poor, Borderline, Satisfactory and Excellent.

Place score in space provided in the Points Allotted Column, total the score for each Section and insert in the space provided. The Section totals should then be tabulated and indicated in the Total Earned column of the Appraisal Summary. Use the space provided in the Justification for Allocation of Points (Form SFA-1) to provide notes justifying the scores given at the extreme ends of the scale.

STEP V - Completion of the Profile Chart for School Facilities Appraisal. The Profile Chart utilizes percentages rather than point scores. Divide the Total of each Section by the total possible points and record on the Profile Chart as a bar graph. The Profile Chart provides an easily interpreted picture of each of the sections and the Grand Total. See sample Profile Chart on page E-45.

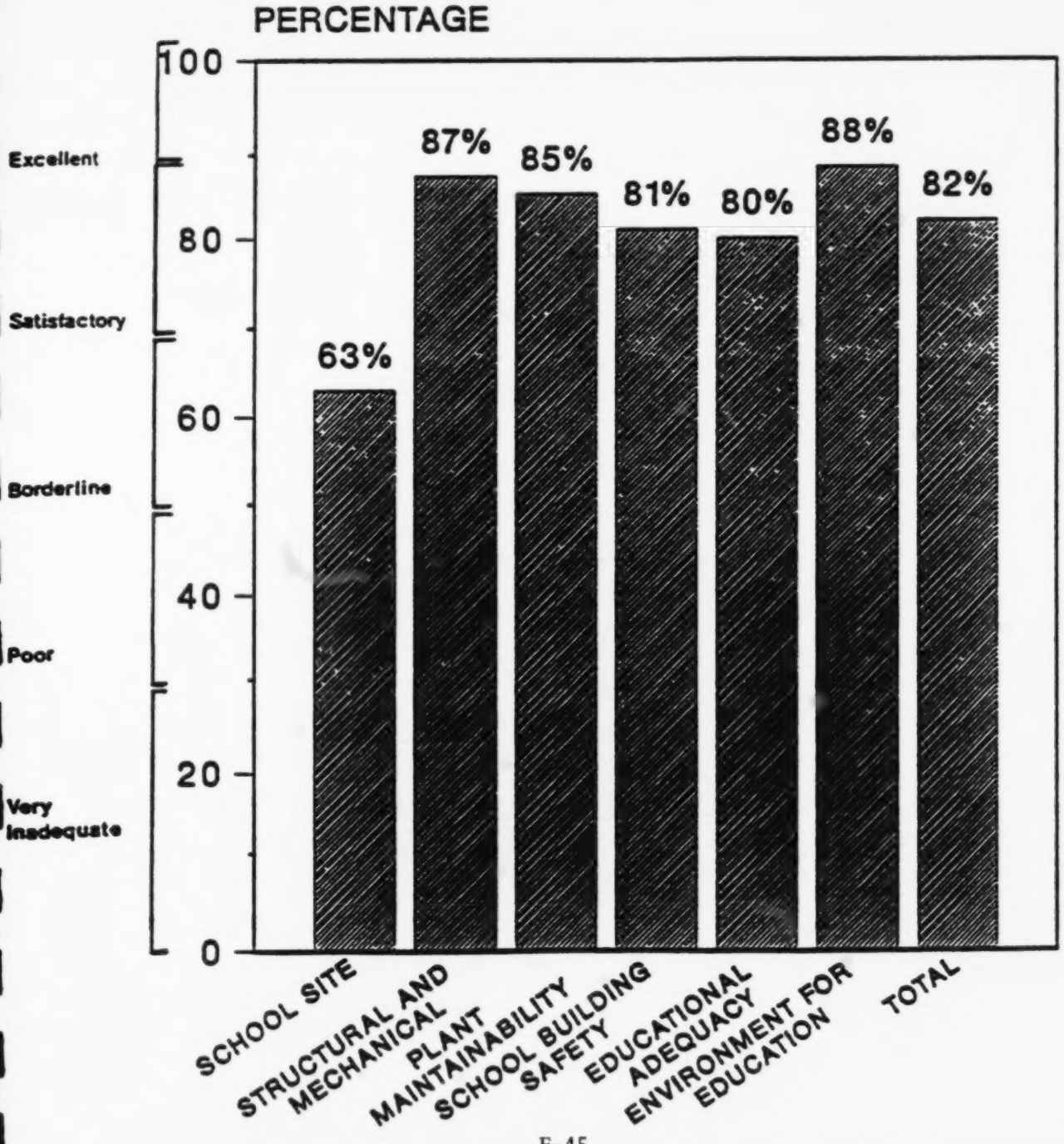
SOUTHWOOD VALLEY ELEMENTARY

SAMPLE



COLUMBUS ELEMENTARY SCHOOL BUILDING APPRAISAL.

SAMPLE



Elementary School

BUILDING DATA RECORD

Name of Appraiser _____ Date of Appraisal _____

Building Name _____

Street Address _____

City/Town, State _____ Zip Code _____

Telephone Number(s) _____

School District _____

Setting: Urban _____ Suburban _____ Small City _____ Rural _____

Site-Acreage _____ Building Square Footage _____

Grades Housed _____ Student Capacity _____

Number of Teaching Stations _____ Number of Floors _____

Student Enrollment _____ As Of _____

Dates of Construction _____

Energy Sources: Fuel Oil _____ Gas _____ Electricity _____ Solar _____

Air Conditioning: Roof Top _____ Window Units _____ Central _____ Room Units _____

Heating: Central _____ Roof Top _____ Individual Units _____

Forced Air _____ Steam _____ Hot Water _____

Type of Construction		Exterior Surfacing		Floor Construction	
load bearing masonry	_____	brick	_____	wood joists	_____
steel frame	_____	stucco	_____	steel joists	_____
concrete frame	_____	metal	_____	slab on grade	_____
wood	_____	wood	_____	structural slab	_____
other	_____	other	_____	other	_____

APPRAISAL GUIDE FOR ELEMENTARY SCHOOL FACILITIES

TABLE OF WEIGHTS

Maximum Points Allotted	Non-Existent	Very Inadequate 1-29%	Poor 30-49%	Borderline 50-69%	Satis factory 70-89%	Excellent 90-100%
5	0	1	2	3	4	5
10	0	2	4	6	8	10
15	0	3	6	9	12	15
20	0	4	8	12	16	20
25	0	5	10	15	20	25

APPRAISAL SUMMARY

Section	Possible Points	Total Earned	Per Cent	Rating Category
1.0 The School Site	100			
2.0 Structural & Mechanical	200			
3.0 Plant Maintainability	100			
4.0 School Building Adequacy	200			
5.0 Educational Adequacy	200			
6.0 Environment For Education	200			
TOTAL	1000			

1.0 THE SCHOOL SITE 100 POINTS

		Possible Points	Points Allotted
LOCATION			
1.1	Site is central to and easily accessible to the present and/or future population.	20	
1.2	Location is removed from undesirable business, industry and traffic.	5	
1.3	Site is large enough to meet educational needs as determined by the state and local district.	25	
1.4	Campus is large enough for future onsite expansion if needed.	10	
1.5	Topography is varied enough to provide desired appearance but without steep inclines.	5	
1.6	Site is well landscaped.	5	
1.7	Site has stable, well drained soil free of erosion.	5	
SITE & POTENTIAL			
1.8	Campus is suitable for special instructional needs, e.g. nature study, school gardens and restricted play areas.	5	
1.9	Pedestrian services include adequate sidewalks with designated crosswalks, curb cuts and correct slopes.	5	
1.10	Sufficient on-site solid surface parking for faculty and staff is provided.	5	
1.11	Playgrounds are removed from streets and parking areas.	5	
1.12	Playgrounds are well equipped for age levels.	5	
	TOTAL– THE SCHOOL SITE [see Form SFA-1]	100	

2.0 STRUCTURAL AND MECHANICAL FEATURES 200 Points

STRUCTURAL

		Possible Points	Points Allotted
2.1	Structure meets or exceeds all barrier-free requirements both externally and internally.	15	
2.2	Foundations are strong and stable with proper expansion joints.	10	
2.3	Exterior and interior walls are free of deterioration.	10	
2.4	Roofs are structurally sound, have positive drainage and are weather tight.	15	
2.5	Entrances and exits are located so as to permit efficient student traffic flow.	10	
2.6	Building "envelope" meets energy use code requirements.	10	
2.7	Well maintained ceilings adequately retard sound.	5	
2.8	Walls permit sufficient flexibility for a variety of class sizes.	5	
2.9	Interior is free of friable asbestos and/or toxic materials.	10	
	MECHANICAL/ELECTRICAL		
2.10	Electrical service is underground.	5	
2.11	Electric controls are safely protected with disconnect switches easily accessible.	10	
2.12	Outside water supply is adequate for normal usage.	5	
2.13	Labeled electrical system is not subject to over-heating.	10	
2.14	Each teaching/learning area has four or more convenient wall outlets.	5	
2.15	Well maintained light sources properly placed, provide adequate lighting.	15	
2.16	There is adequate number and placement of properly maintained drinking fountains including provisions for the disabled.	10	
2.17	Number and size of restrooms meet or exceed code requirements.	10	
2.18	Internal building water supply is adequate with sufficient pressure to meet health and safety needs.	10	
2.19	Drainage systems are properly maintained and meet or exceed code requirements.	10	
2.20	Fire alarms, smoke detectors and sprinkler systems are properly maintained and meet or exceed code requirements.	10	
2.21	Intercommunication system consists of a central unit that allows dependable two-way communication between the office and each room.	10	
	TOTAL– STRUCTURAL AND MECHANICAL FEATURES [see Form SFA-1]	200	

3.0 PLANT MAINTAINABILITY — 100 POINTS

		Possible Points	Points Allotted
3.1	Windows, doors and walls are of material and finish requiring minimum maintenance.	10	
3.2	Outdoor light fixtures, electric outlets, equipment and other fixtures are accessible for repair and replacement.	10	
3.3	Classroom floor coverings require minimum of care.	10	
3.4	Ceilings and walls are easily cleaned and resistant to stain.	10	
3.5	Built-in equipment is designed and constructed for ease of maintenance.	10	
3.6	Floors in restrooms, kitchens, cafeterias and corridors require a minimum of maintenance.	10	
3.7	Walls and ceilings in service areas can be easily cleaned.	10	
3.8	Restroom fixtures are wall mounted and of quality finish.	10	
3.9	Adequate custodial storage space with water and drain is accessible to all areas.	10	
3.10	Adequate electric outlets and power are available in every area to permit routine cleaning.	10	
	TOTAL–PLANT MAINTAINABILITY [see Form SFA-1]	100	

4.0 SCHOOL BUILDING SAFETY — 200 POINTS

		Possible Points	Points Allotted
SITE SAFETY			
4.1	Access streets have sufficient signals and signs to permit safe entrance to and exit from school area.	5	
4.2	Off-site sidewalks are available for safety of pedestrians.	5	
4.3	On-site sidewalks and steps are protected by proper signs and signals.	5	
4.4	Vehicular entrances and exits are safe for traffic flow.	5	
4.5	Student loading areas are segregated from other vehicular traffic and pedestrian walkways.	15	
4.6	Locations and types of playground equipment are free from hazard.	5	
BUILDING SAFETY			
4.7	The heating unit(s) is located away from student occupied areas in accordance with local building code.	20	
4.8	Classroom doors are recessed and open outward.	10	
4.9	Exterior doors open outward and are equipped with panic hardware.	10	
4.10	Exits are marked with lighted exit signs on separate electrical circuits.	10	
4.11	Glass is properly located and protected to prevent accidental student contact–safety glass or wire glass where code requires.	5	
4.12	Emergency lighting is provided throughout building.	10	
4.13	Flooring (including ramps) is maintained in a nonslip condition.	5	
4.14	Stair risers do not exceed 7 1/2 inches and range in number from 3 - 16.	5	
4.15	Multi-story buildings have at least two stairways.	15	
4.16	Fixed projections in the traffic areas do not extend more than eight inches from the corridor wall.	5	
4.17	Traffic areas terminate at an exit or a stairway leading to an egress.	5	
EMERGENCY SAFETY			
4.18	Automatic and manual fire alarm system with a distinctive sound and flashing light is provided.	10	
4.19	There are at least two independent exits to safety from any point in the building.	10	
4.20	Stairways and/or exits are of fire-resistant material.	10	
4.21	Noncombustible and/or fire-resistant materials are used throughout the structure.	10	
4.22	Adequate fire safety equipment is properly located.	15	
4.23	Ample space is provided in traffic and protected areas for student safety in the event of natural disasters.	5	
	TOTAL–SCHOOL BUILDING SAFETY [see Form SAF-1]	200	

5.0 EDUCATIONAL ADEQUACY — 200 POINTS

		Possible Points	Points Allotted
ACADEMIC LEARNING AREAS			
5.1	Size of academic learning areas meets minimum standard specifications.	10	
5.2	Learning areas are conveniently located near related educational activities.	10	
5.3	Academic learning areas are situated away from noisy areas such as cafeterias and gyms.	5	
5.4	Storage for student materials is adequate.	5	
5.5	Storage for teacher materials is adequate.	5	
5.6	Design of learning areas is compatible with instructional need.	10	
SPECIAL LEARNING AREAS			
5.7	Special learning area(s) meets minimum standards for size.	10	
5.8	Gymnasium (or covered P.E. area) serves the elementary school program.	10	
5.9	Library/Resource/Media Center provides appropriate and attractive space.	10	
5.10	The music program is provided separate adequate storage and sound treated instructional space.	10	
5.11	Pre-kindergarten and kindergarten programs are in space appropriate for the nature of instruction and age of students.	10	
5.12	Appropriate space is provided for small groups and/or individual instruction and remedial programs.	10	
5.13	Storage for student materials in special learning areas is adequate.	5	
5.14	Storage for teacher materials in special learning areas is adequate.	5	
5.15	Design of learning areas is compatible with instructional need.	10	
5.16	Chalkboards, fixed projection screen and display areas are easily visible.	5	
SUPPORT SPACE			
5.17	Administrative offices provide the administrative personnel with sufficient work space and privacy.	10	
5.18	Suitable reception area for students, teachers and visitors is available.	5	
5.19	Ample and conveniently located storage includes secure place for permanent records.	5	
5.20	Cafeteria/cafetorium is attractive with sufficient space for service delivery, storage and food preparation.	10	
5.21	Clinic area is near administrative offices and is equipped to meet elementary requirements.	5	
5.22	Teachers' lounge and work area provides teachers a place for rest and preparation.	10	
5.23	Counselor's office insures privacy and sufficient storage.	5	
5.24	Clothing/book areas are of sufficient size and number to serve student needs.	5	

		Possible Points	Points Allotted
5.25	Book room and general storage spaces near administrative offices are adequate for books, supplies and equipment.	5	
5.26	Student activity area permits social gathering of students during leisure time.	10	
	TOTAL– EDUCATIONAL ADEQUACY [see Form SFA-1]	200	

6.0 ENVIRONMENT FOR EDUCATION — 200 POINTS

		Possible Points	Points Allotted
	EXTERIOR ENVIRONMENT		
6.1	Overall design is aesthetically pleasing to young children.	10	
6.2	Site and building are well landscaped.	10	
6.3	Building materials provide attractive color and texture.	5	
6.4	Entrances are appealing to students of the age and maturity of students served.	10	
6.5	Entrances and walkways are sheltered from sun and inclement weather.	10	
	INTERIOR ENVIRONMENT		
6.6	Interior stairways and ramps have handrails that meet code requirements.	5	
6.7	Movement areas permit ease and control of traffic flow.	10	
6.8	Areas for students to congregate are suitable to the age group.	10	
6.9	Large group areas are designed for effective control of young children.	10	
6.10	There is provision for year around comfortable temperature throughout the building.	15	
6.11	Ventilating system provides adequate circulation of clean air.	15	
6.12	Fenestration contributes to a pleasant environment.	10	
6.13	Lighting system provides proper intensity, diffusion and distribution of illumination.	15	
6.14	Acoustical treatment of ceilings, walls and floors provides effective sound control.	10	
6.15	Exterior noise is not a distraction in the classrooms.	10	
6.16	Color schemes, building materials and decor provide an impetus to learning.	20	
6.17	Furniture and equipment provide a pleasing atmosphere.	10	
6.18	Drinking fountains and restroom facilities are conveniently located.	15	
	TOTAL– ENVIRONMENT FOR EDUCATION [see Form SFA-1]	200	

JUSTIFICATION FOR ALLOCATION OF POINTS

Building Level _____

Appraisal Section _____

Indicate the justification for the appraisal decision in the space provided.

Building features that clearly exceed criteria:

1. _____
2. _____
3. _____
4. _____

Building features that are non-existent or very inadequate:

1. _____
2. _____
3. _____
4. _____

FORM SFA-1

MIDDLE SCHOOL FORMS

To Be Used In Conjunction With

GUIDE FOR SCHOOL FACILITY APPRAISAL

by

Harold L. Hawkins, Ed.D.

and

H. Edward Lilley, Ph.D.

DIRECTIONS FOR APPRAISING FACILITIES FOR MIDDLE SCHOOLS

Prior to evaluating a building, the apprasier should become familiar with the educational program provided within the existing school facility. It is essential also to determine other pertinent factors about the facility which will provide background information sufficient to insure a thorough and accurate appraisal. Particularly helpful are the building's architectural plans, specifications and layout, if these are available. If possible, the school plant should be appraised at a time when school is in session so that the actual use of the building is more apparent.

Although the Appraisal Guide is designed for individual appraiser use, ideally the school plant should be evaluated by three to five appraisers. A comparison and averaging of the several appraisals will result in a better and more objective overall rating.

The instrument uses an additive scoring method, with each item having a maximum number of allowable points. A total of 1000 points is distributed among these six major categories:

Section	Maximum Points
1.0 The School Site	100
2.0 Structural and Mechanical Features	200
3.0 Plant Maintainability	100
4.0 School Building Safety	200
5.0 Educational Adequacy	200
6.0 Environment for Education	200

STEP I - Prior to appraisal: review educational program; identify the number of faculty members and students; and examine the floor and plot plans carefully.

STEP II - Overview of the Building and Grounds. Upon approach to the site look for traffic patterns, school safety signs, neighborhood environment, etc. Begin the appraisal by taking a preliminary tour of the entire building noting both exterior and interior features. Information recorded in the Building Data Record obtained prior to arrival at the campus should be verified. The appraisal weights should not be determined during this initial walk through. The appraisal is better accomplished as separate individual steps in the process. See sample Building Data Record on page M-58.

STEP III - The appraisal is aided by including a floor plan for the school and the approximate location of the building(s) on the site. Attach a furnished copy of a plan or provide a rough drawing similar to that shown on page M-56.

STEP IV - Assignment of Scores. After the completion of the preliminary inspection, go through the entire instrument section by section. The appraisal will, of course, be more accurate if each item is carefully considered while it is appropriately observed. Do not try to evaluate from memory-use actual observation when making the appraisal decision.

Items that are needed (required) but are non-existent should be given a 0 score. If an item is not needed and is non-existent, full credit should be allowed.

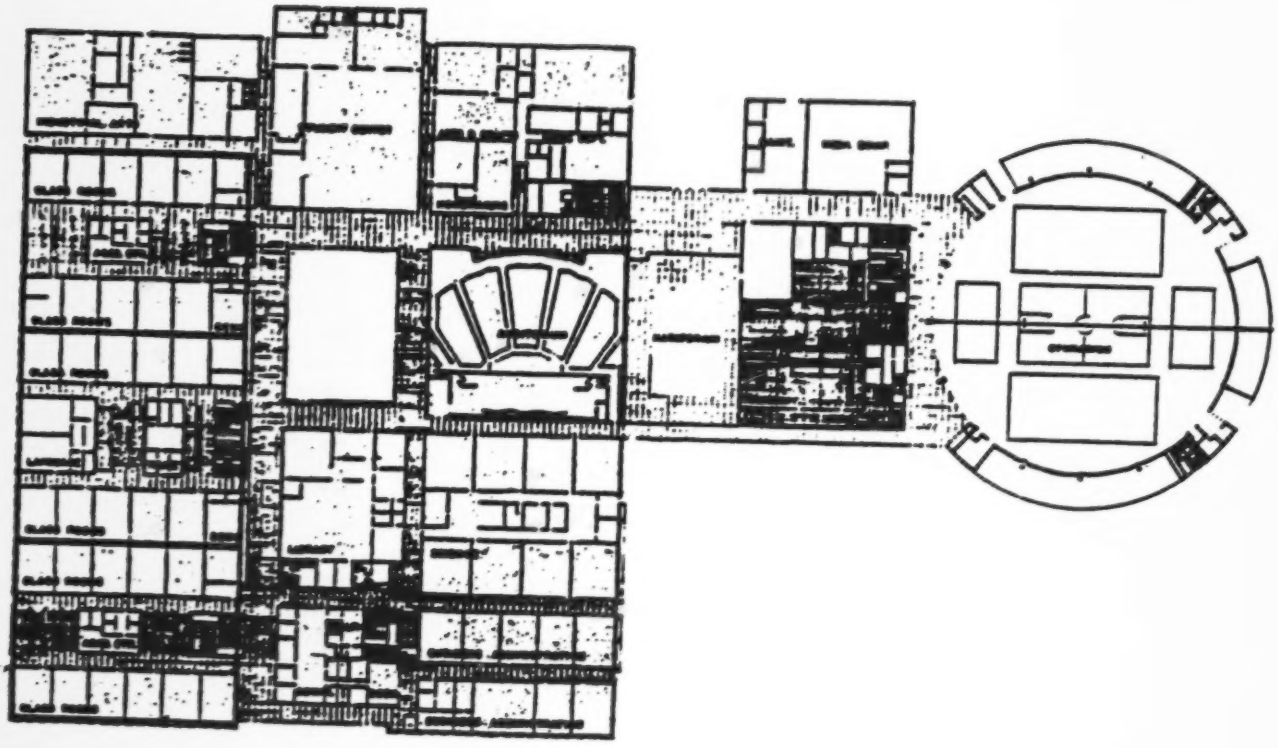
Note the Table of Weights for assistance in determining the score to be given each item. Each item should be considered in the following terms: Non-Existent, Very Inadequate, Poor, Borderline, Satisfactory and Excellent.

Place score in space provided in the Points Allotted Column, total the score for each Section and insert in the space provided. The Section totals should then be tabulated and indicated in the Total Earned column of the Appraisal Summary. Use the space provided in the Justification for Allocation of Points (Form SFA-1) to provide notes justifying the scores given at the extreme ends of the scale.

STEP V - Completion of the Profile Chart for School Facilities Appraisal. The Profile Chart utilizes percentages rather than point scores. Divide the Total of each Section by the total possible points and record on the Profile Chart as a bar graph. The Profile Chart provides an easily interpreted picture of each of the sections and the Grand Total. See sample Profile Chart on page M-57.

MIDDLE SCHOOL

SAMPLE



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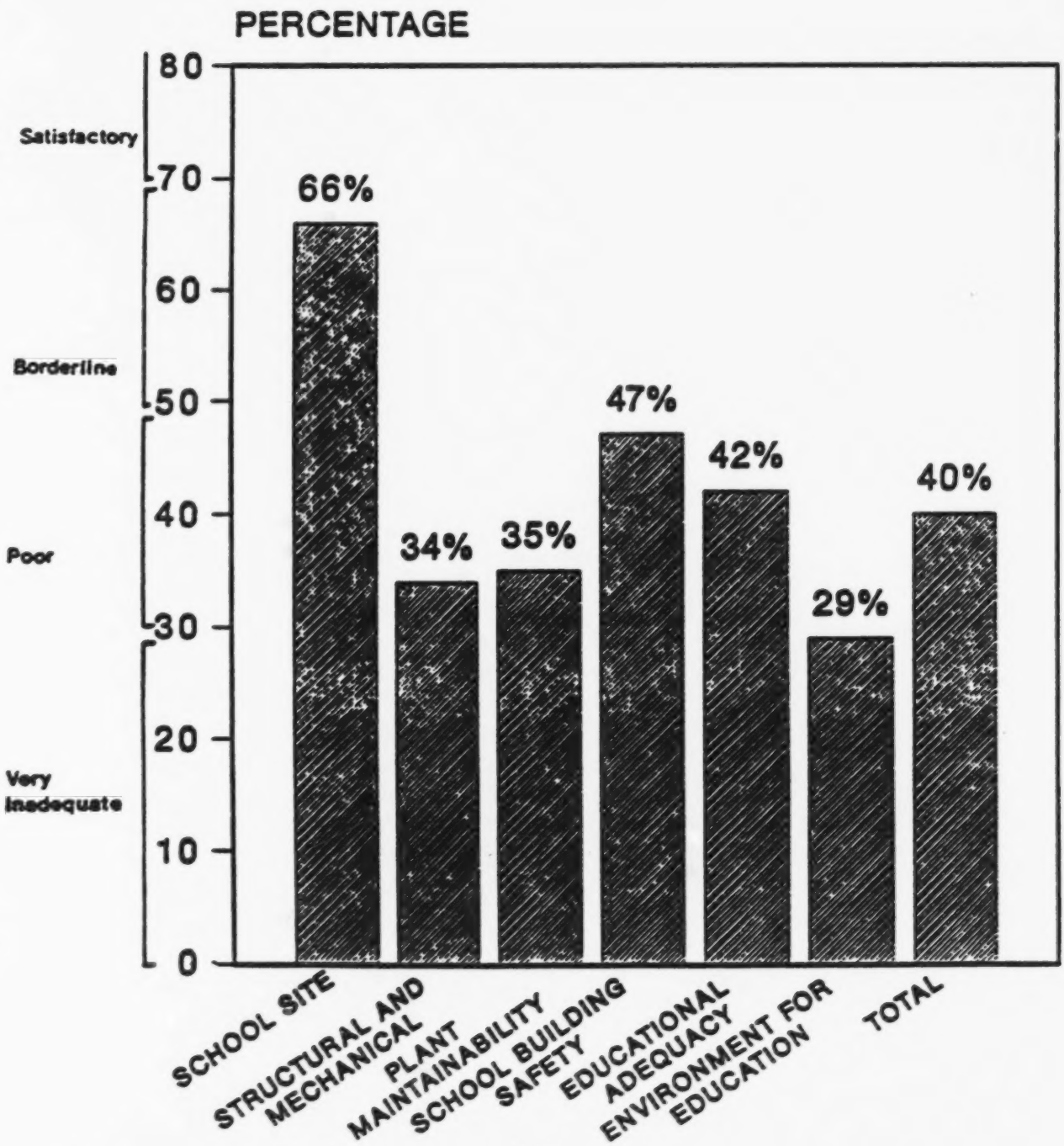
COLUMBUS MIDDLE SCHOOL
BUILDING APPRAISAL

SAMPLE



Middle School

BUILDING DATA RECORD

Name of Appraiser _____ Date of Appraisal _____

Building Name _____

Street Address _____

City/Town, State _____ Zip Code _____

Telephone Number(s) _____

School District _____

Setting: Urban _____ Suburban _____ Small City _____ Rural _____

Site-Acreage _____ Building Square Footage _____

Grades Housed _____ Student Capacity _____

Number of Teaching Stations _____ Number of Floors _____

Student Enrollment _____ As Of _____

Dates of Construction _____

Energy Sources: Fuel Oil _____ Gas _____ Electricity _____ Solar _____

Air Conditioning: Roof Top _____ Window Units _____ Central _____ Room Units _____

Heating: Central _____ Roof Top _____ Individual Units _____

Forced Air _____ Steam _____ Hot Water _____

Type of Construction		Exterior Surfacing		Floor Construction	
load bearing masonry	_____	brick	_____	wood joists	_____
steel frame	_____	stucco	_____	steel joists	_____
concrete frame	_____	metal	_____	slab on grade	_____
wood	_____	wood	_____	structural slab	_____
other	_____	other	_____	other	_____

TABLE OF WEIGHTS

Maximum Points Allotted	Non-Existent	Very Inadequate 1-29%	Poor 30-49%	Borderline 50-69%	Satis factory 70-89%	Excellent 90-100%
5	0	1	2	3	4	5
10	0	2	4	6	8	10
15	0	3	6	9	12	15
20	0	4	8	12	16	20
25	0	5	10	15	20	25

APPRAISAL SUMMARY

Section	Possible Points	Total Earned	Per Cent	Rating Category
1.0 The School Site	100			
2.0 Structural & Mechanical	200			
3.0 Plant Maintainability	100			
4.0 School Building Adequacy	200			
5.0 Educational Adequacy	200			
6.0 Environment For Education	200			
TOTAL	1000			

1.0 THE SCHOOL SITE — 100 POINTS

		Possible Points	Points Allotted
LOCATION			
1.1	Site is central to and easily accessible to the present and/or future population.	20	
1.2	Location is removed from undesirable business, industry and traffic.	5	
1.3	Site is large enough to meet educational needs as determined by the state and local district.	25	
1.4	Campus is large enough for future on-site expansion if needed.	10	
1.5	Topography is varied enough to provide desired appearance but without steep inclines.	5	
1.6	Site is well landscaped.	5	
1.7	Site has stable, well drained soil free of erosion.	5	
SITE & POTENTIAL			
1.8	Campus is suitable for special instructional needs, e.g. nature study, school gardens and intramural activities.	5	
1.9	Pedestrian services include adequate sidewalks with designated crosswalks, curb cuts and correct slopes.	5	
1.10	Sufficient on-site solid surface parking for faculty and staff is provided.	5	
1.11	Intramural athletic areas are removed from streets and parking areas.	5	
1.12	Intramural areas are provided for a variety of youth activites.	5	
	TOTAL– THE SCHOOL SITE [see Form SFA-1]	100	

2.0 STRUCTURAL AND MECHANCIAL FEATURES 200 POINTS

		Possible Points	Points Allotted
STRUCTURAL			
2.1	Structure meets or exceeds all barrier-free requirements both externally and internally.	15	
2.2	Foundations are strong and stable with proper expansion joints.	10	
2.3	Exterior and interior walls are free of deterioration.	10	
2.4	Roofs are structurally sound, have positive drainage and are weather tight.	15	
2.5	Entrances and exits are located so as to permit efficient student traffic flow.	10	
2.6	Building "envelope" meets energy use code requirements.	10	
2.7	Well maintained ceilings adequately retard sound.	5	
2.8	Walls permit sufficient flexibility for a variety of class sizes.	5	
2.9	Interior is free of friable asbestos and/or toxic materials.	10	
MECHANICAL/ELECTRICAL			
2.10	Electrical service is underground.	5	
2.11	Electric controls are safely protected with disconnect switches easily accessible.	10	
2.12	Outside water supply is adequate for normal usage.	5	
2.13	Labeled electrical system is not subject to over-heating.	10	
2.14	Each teaching/learning area has four or more convenient wall outlets.	5	
2.15	Well maintained light sources properly placed, provide adequate lighting.	15	
2.16	There is adequate number and placement of properly maintained drinking fountains including provisions for the disabled.	10	
2.17	Number and size of restrooms meet or exceed code requirements.	10	
2.18	Internal building water supply is adequate with sufficient pressure to meet health and safety needs.	10	
2.19	Drainage systems are properly maintained and meet or exceed code requirements.	10	
2.20	Fire alarms, smoke detectors and sprinkler systems are properly maintained and meet or exceed code requirements.	10	
2.21	Intercommunication system consists of a central unit that allows dependable two-way communication between the office and each room.	10	
	TOTAL– STRUCTURAL AND MECHANICAL FEATURES [see Form SFA-1]	200	

3.0	PLANT MAINTAINABILITY	100 POINTS	Possible Points	Points Allotted
3.1	Windows, doors and walls are of material and finish requiring minimum maintenance.		10	
3.2	Outdoor light fixtures, electric outlets, equipment and other fixtures are accessible for repair and replacement.		10	
3.3	Classroom floor coverings require minimum of care.		10	
3.4	Ceilings and walls are easily cleaned and resistant to stain.		10	
3.5	Built-in equipment is designed and constructed for ease of maintenance.		10	
3.6	Floors in restrooms, kitchens, cafeterias and corridors require a minimum of maintenance.		10	
3.7	Walls and ceilings in service areas can be easily cleaned.		10	
3.8	Restroom fixtures are wall mounted and of quality finish.		10	
3.9	Adequate custodial storage space with water and drain is accessible to all areas.		10	
3.10	Adequate electric outlets and power are available in every area to permit routine cleaning.		10	
		TOTAL– PLANT MAINTAINABILITY [see Form SFA-1]	100	

4.0 SCHOOL BUILDING SAFETY — 200 POINTS

		Possible Points	Points Allotted
SITE SAFETY			
4.1	Access streets have sufficient signals and signs to permit safe entrance to and exit from school area.	5	
4.2	Off-site sidewalks are available for safety of pedestrians.	5	
4.3	On-site sidewalks and steps are protected by proper signs and signals.	5	
4.4	Vehicular entrances and exits are safe for traffic flow.	5	
4.5	Student loading areas are segregated from other vehicular traffic and pedestrian walkways.	15	
4.6	Locations and types of playground equipment are free from hazard.	5	
BUILDING SAFETY			
4.7	The heating unit(s) is located away from student occupied areas in accordance with local building code.	20	
4.8	Classroom doors are recessed and open outward.	10	
4.9	Exterior doors open outward and are equipped with panic hardware.	10	
4.10	Exits are marked with lighted exit signs on separate electrical circuits.	10	
4.11	Glass is properly located and protected to prevent accidental student contact–safety glass or wire glass where code requires.	5	
4.12	Emergency lighting is provided throughout building.	10	
4.13	Flooring (including ramps) is maintained in a nonslip condition.	5	
4.14	Stair risers do not exceed 7 1/2 inches and range in number from 3-16.	5	
4.15	Multi-story buildings have at least two stairways.	15	
4.16	Fixed projections in the traffic areas do not extend more than eight inches from the corridor wall.	5	
4.17	Traffic areas terminate at an exit or a stairway leading to an egress.	5	
EMERGENCY SAFETY			
4.18	Automatic and manual fire alarm system with a distinctive sound and flashing light is provided.	10	
4.19	There are at least two independent exits to safety from any point in the building.	10	
4.20	Stairways and/or exits are fire-resistant material.	10	
4.21	Noncombustible and/or fire-resistant materials are used throughout the structure.	10	
4.22	Adequate fire safety equipment is properly located.	15	
4.23	Ample space is provided in traffic and protected areas for student safety in the event of natural disasters.	5	
	TOTAL– SCHOOL BUILDING SAFETY [see Form SFA-1]	200	

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5.0 EDUCATIONAL ADEQUACY — 200 POINTS

		Possible Points	Points Allotted
	ACADEMIC LEARNING AREAS		
5.1	Size of academic learning areas meets minimum standard specifications.	10	
5.2	Learning areas are conveniently located near related educational activities.	10	
5.3	Academic learning areas are situated away from noisy areas such as cafeterias and gyms.	5	
5.4	Storage for student materials is adequate.	5	
5.5	Storage for teacher materials is adequate.	5	
5.6	Design of learning areas is compatible with instructional need.	10	
	SPECIAL LEARNING AREAS		
5.7	Special learning area(s) meets minimum standards for size.	10	
5.8	Gymnasium adequately serves the needs of the middle school program.	10	
5.9	Library/Resource/Media Center provides appropriate and attractive space.	10	
5.10	The music program is provided separate adequate storage and sound treated instructional space.	10	
5.11	Science laboratories provide sufficient space and are appropriately equipped.	10	
5.12	The space for art is sufficient to accommodate the program and equipment.	10	
5.13	Storage for student materials in special learning areas is adequate.	5	
5.14	Storage for teacher materials in special learning areas is adequate.	5	
5.15	Design of learning areas is compatible with instructional need.	10	
5.16	Chalkboards, fixed projection screen and display areas are easily visible.	5	
	SUPPORT SPACE		
5.17	Administrative offices provide the administrative personnel with sufficient work space and privacy.	10	
5.18	Suitable reception area for students, teachers and visitors is available.	5	
5.19	Ample and conveniently located storage includes secure place for permanent records.	5	
5.20	Cafeteria/cafetorium is attractive with sufficient space for service delivery, storage and food preparation.	10	
5.21	Clinic area is near administrative offices and is equipped to meet middle school requirements.	5	
5.22	Teachers' lounge and work area provides teachers a place for rest and preparation.	10	
5.23	Counselor's office insures privacy and sufficient storage.	5	
5.24	Clothing/book areas are of sufficient size and number to serve student needs.	5	

	Possible Points	Points Allotted
5.25 Book room and general storage space near administrative offices are adequate for books, supplies and eqiupment.	5	
5.26 Student activity area permits social gathering of students during leisure time.	10	
TOTAL– EDUCATIONAL ADEQUACY [see Form SFA-1]	200	

6.0 ENVIRONMENT FOR EDUCATION — 200 POINTS

		Possible Points	Points Allotted
	EXTERIOR ENVIRONMENT		
6.1	Overall design is aesthetically pleasing to age group.	10	
6.2	Site and building are well landscaped.	10	
6.3	Building materials provide attractive color and texture.	5	
6.4	Entrances are appealing to students of the age and maturity of students served.	10	
6.5	Entrances and walkways are sheltered from sun and inclement weather.	10	
	INTERIOR ENVIRONMENT		
6.6	Interior stairways and ramps have handrails that meet code requirements.	5	
6.7	Movement areas permit ease and control of traffic flow.	10	
6.8	Areas for students to congregate are suitable to the age group.	10	
6.9	Large group areas are designed for effective management of middle school students.	10	
6.10	There is provision for year around comfortable temperature throughout the building.	15	
6.11	Ventilating system provides adequate circulation of clean air.	15	
6.12	Fenestration contributes to a pleasant environment	10	
6.13	Lighting system provides proper intensity, diffusion and distribution of illumination.	15	
6.14	Acoustical treatment of ceilings, walls and floors provides effective sound control.	10	
6.15	Exterior noise is not a distraction in the classrooms.	10	
6.16	Color schemes, building materials and decor provide an impetus to learning.	20	
6.17	Furniture and equipment provide a pleasing atmosphere.	10	
6.18	Drinking fountains and restroom facilities are conveniently located.	15	
	TOTAL– ENVIRONMENT FOR EDUCATION [see Form SFA-1]	200	

JUSTIFICATION FOR ALLOCATION OF POINTS

Building Level _____

Appraisal Section _____

Indicate the justification for the appraisal decision in the space provided.

Building features that clearly exceed criteria:

1. _____
2. _____
3. _____
4. _____

Building features that are non-existent or very inadequate:

1. _____
2. _____
3. _____
4. _____

FORM SFA-1

HIGH SCHOOL FORMS

To Be Used In Conjunction With

GUIDE FOR SCHOOL FACILITY APPRAISAL

by

Harold L. Hawkins, Ed.D.

and

H. Edward Lilley, Ph.D.

DIRECTIONS FOR APPRAISING FACILITIES FOR HIGH SCHOOLS

Prior to evaluating a building, the appraiser should become familiar with the educational program provided within the existing school facility. It is essential also to determine other pertinent factors about the facility which will provide background information sufficient to insure a thorough and accurate appraisal. Particularly helpful are the building's architectural plans, specifications and layout, if these are available. If possible, the school plant should be appraised at a time when school is in session so that the actual use of the building is more apparent.

Although the Appraisal Guide is designed for individual appraiser use, ideally the school plant should be evaluated by three to five appraisers. A comparison and averaging of the several appraisals will result in a better and more objective overall rating.

The instrument uses an additive scoring method, with each item having a maximum number of allowable points. A total of 1000 points is distributed among these six major categories:

Section	Maximum Points
1.0 The School Site	100
2.0 Structural and Mechanical Features	200
3.0 Plant Maintainability	100
4.0 School Building Safety	200
5.0 Educational Adequacy	200
6.0 Environment for Education	200

STEP I - Prior to appraisal: review educational program; identify the number of faculty members and students; and examine the floor and plot plans carefully.

STEP II - Overview of the Building and Grounds. Upon approach to the site look for traffic patterns, school safety signs, neighborhood environment, etc. Begin the appraisal by taking a preliminary tour of the entire building noting both exterior and interior features. Information recorded in the Building Data Record obtained prior to arrival at the campus should be verified. The appraisal weights should not be determind during this initial walk through. The appraisal is better accomplished as separatae individual steps in the process. See sample Building Data Record on page H-70.

STEP III - The appraisal is aided by including a floor plan for the school and the approximate location of the building(s) on the site. Attach a furnished copy of a plan or provide a rough drawing similar to that shown on page H-68.

STEP IV - Assignment of Scores. After the completion of the preliminary inspection, go through the entire instrument section by section. The appraisal will, of course, be more accurate if each item is carefully considered while it is appropriately observed. Do not try to evalate from memory– use actual observation when making the appraisal decision.

Items that are needed (required) but are non-existent should be given a 0 score. If an item is not needed and is non-existent full credit should be allowed.

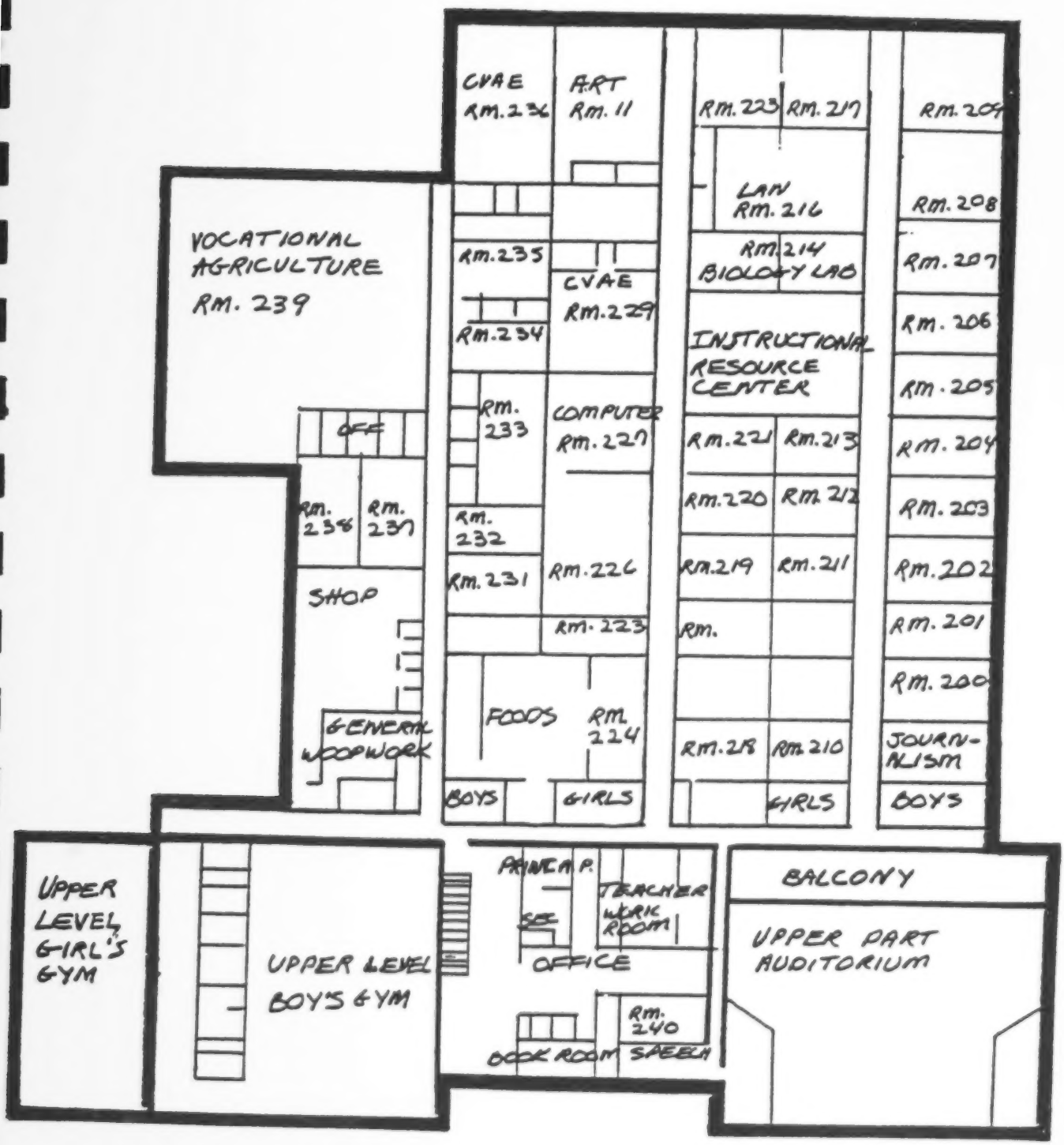
Note the Table of Weights for assistance in determining the score to be given each item. Each item should be considered in the following terms: Non-Existent, Very Adequate, Poor, Borderline, Satisfactory and Excellent.

Place score in space provided in the Points Allotted column, total the score for each Section and insert in the space provided. The Section totals should then be tabulated and indicated in the Total Earned column of the Appraisal Summary. Use the space provided in the Justification for Allocation of Points (Form SFA-1) to provide notes justifying the scores given at the extreme ends of the scale.

STEP V - Completion of the Profile Chart for School Facilities Appraisal. The Profile Chart utilizes percentages rather than point scores. Divide the Total of each Section by the toal possible points and record on the Profile Chart as a bar graph. The Profile Chart provides an easily interpreted picture of each of the sections and the Grand Total. See sample Profile Chart on page H-69.

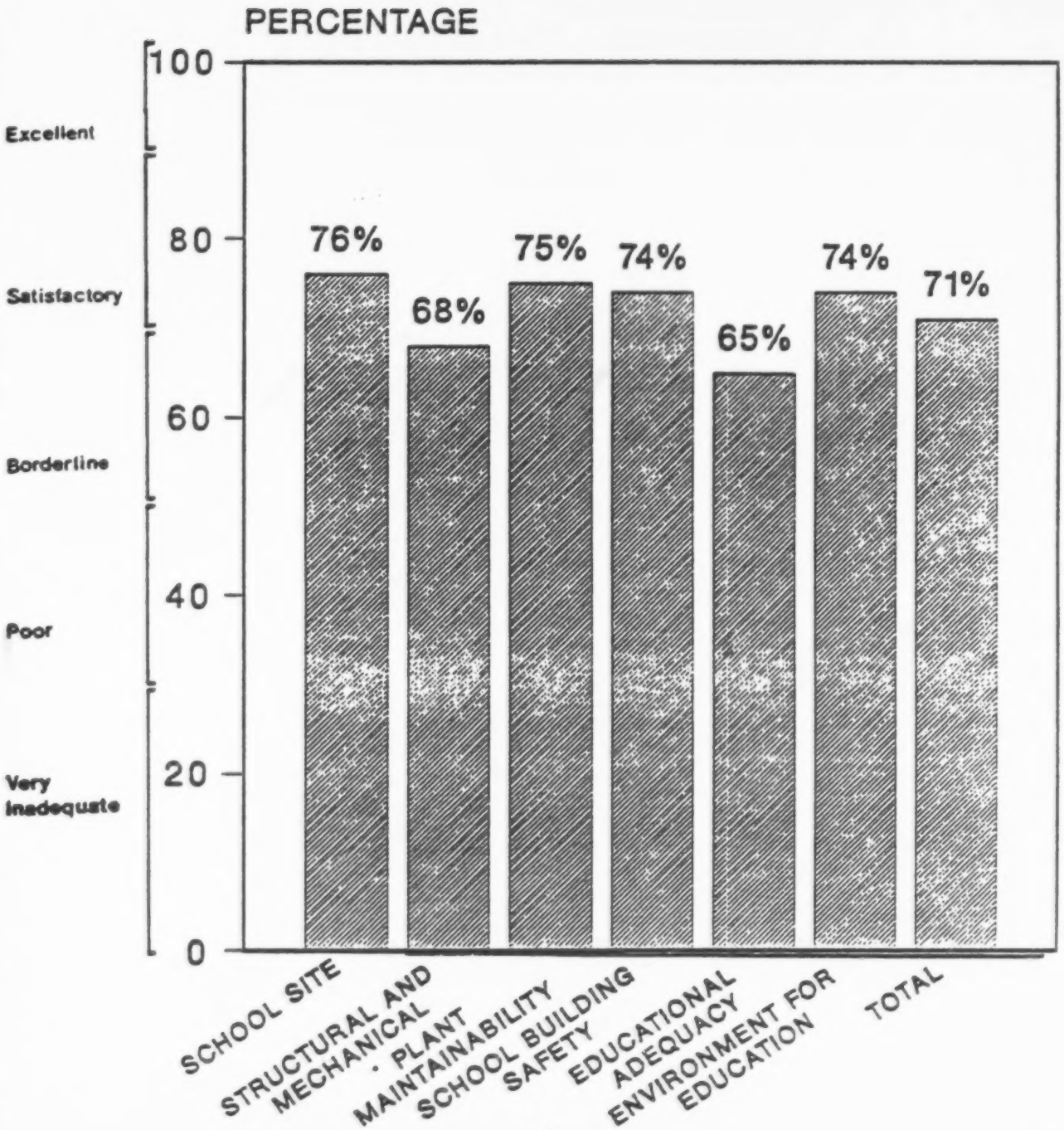
LIVINGSTON HIGH SCHOOL
FLOOR & SITE PLAN

SAMPLE



COLUMBUS HIGH SCHOOL BUILDING APPRAISAL

SAMPLE



High School

BUILDING DATA RECORD

Name of Appraiser _____ Date of Appraisal _____

Building Name _____

Street Address _____

City/Town, State _____ Zip Code _____

Telephone Number(s) _____

School District _____

Setting: Urban _____ Suburban _____ Small City _____ Rural _____

Site-Acreage _____ Building Square Footage _____

Grades Housed _____ Student Capacity _____

Number of Teaching Stations _____ Number of Floors _____

Student Enrollment _____ As Of _____

Dates of Construction _____

Energy Sources: Fuel Oil _____ Gas _____ Electricity _____ Solar _____

Air Conditioning: Roof Top _____ Window Units _____ Central _____ Room Units _____

Heating: Central _____ Roof Top _____ Individual Units _____

Forced Air _____ Steam _____ Hot Water _____

Type of Construction		Exterior Surfacing		Floor Construction	
load bearing masonry	_____	brick	_____	wood joists	_____
steel frame	_____	stucco	_____	steel joists	_____
concrete frame	_____	metal	_____	slab on grade	_____
wood	_____	wood	_____	structural slab	_____
other	_____	other	_____	other	_____

APPRAISAL GUIDE FOR HIGH SCHOOL FACILITIES

TABLE OF WEIGHTS

Maximum Points Allotted	Non-Existent	Very Inadequate 1-29%	Poor 30-49%	Borderline 50-69%	Satis factory 70-89%	Excellent 90-100%
5	0	1	2	3	4	5
10	0	2	4	6	8	10
15	0	3	6	9	12	15
20	0	4	8	12	16	20
25	0	5	10	15	20	25

APPRAISAL SUMMARY

Section	Possible Points	Total Earned	Per Cent	Rating Category
1.0 The School Site	100			
2.0 Structural & Mechanical	200			
3.0 Plant Maintainability	100			
4.0 School Building Adequacy	200			
5.0 Educational Adequacy	200			
6.0 Environment For Education	200			
TOTAL	1000			

1.0 THE SCHOOL SITE 100 POINTS

LOCATION

		Possible Points	Points Allotted
1.1	Site is central to and easily accessible to the present and/or future population.	20	
1.2	Location is removed from undesirable business, industry and traffic.	5	
1.3	Site is large enough to meet educational needs as determined by the state and local district.	25	
1.4	Campus is large enough for future on-site expansion if needed.	10	
1.5	Topography is varied enough to provide desired appearance but without steep inclines.	5	
1.6	Site is well landscaped.	5	
1.7	Site has stable, well drained soil free of erosion.	5	
SITE & POTENTIAL			
1.8	Campus is suitable for special instructional needs, e.g. outdoor learning laboratories.	5	
1.9	Pedestrian services include adequate sidewalks with designated crosswalks, curb cuts and correct slopes.	5	
1.10	Sufficient on-site solid surface parking for faculty, students, staff and community is provided.	5	
1.11	Athletic areas are adequate with sufficient parking space.	5	
1.12	Streets and parking areas are well designed with solid surfaces.	5	
	TOTAL– THE SCHOOL SITE [see Form SFA-1]	100	

2.0 STRUCTURAL AND MECHANICAL FEATURES 200 Points

		Possible Points	Points Allotted
STRUCTURAL			
2.1	Structure meets or exceeds all barrier-free requirements both externally and internally.	15	
2.2	Foundations are strong and stable with proper expansion joints.	10	
2.3	Exterior and interior walls are free of deterioration.	10	
2.4	Roofs are structurally sound, have positive drainage and are weather tight.	15	
2.5	Entrances and exits are located so as to permit efficient student traffic flow.	10	
2.6	Building "envelope" meets energy use code requirements.	10	
2.7	Well maintained ceilings adequately retard sound.	5	
2.8	Walls permit sufficient flexibility for a variety of class sizes.	5	
2.9	Interior is free of friable asbestos and/or toxic materials.	10	
MECHANICAL/ELECTRICAL			
2.10	Electrical service is underground.	5	
2.11	Electric controls are safely protected with disconnect switches easily accessible.	10	
2.12	Outside water supply is adequate for normal usage.	5	
2.13	Labeled electrical system is not subject to over-heating.	10	
2.14	Each teaching/learning area has four or more convenient wall outlets.	5	
2.15	Well maintained light sources properly placed, provide adequate lighting.	15	
2.16	There is adequate number and placement of properly maintained drinking fountains including provisions for the disabled.	10	
2.17	Number and size of restrooms meet or exceed code requirements.	10	
2.18	Internal building water supply is adequate with sufficient pressure to meet health and safety needs.	10	
2.19	Drainage systems are properly maintained and meet or exceed code requirements.	10	
2.20	Fire alarms, smoke detectors and sprinkler systems are properly maintained and meet or exceed code requirements.	10	
2.21	Intercommunication system consists of a central unit that allows dependable two-way communication between the office and each room.	10	
	TOTAL– STRUCTURAL AND MECHANICAL FEATURES [see Form SFA-1]	200	

3.0 PLANT MAINTAINABILITY — 100 POINTS

		Possible Points	Points Allotted
3.1	Windows, doors and walls are of material and finish requiring minimum maintenance.	10	
3.2	Outdoor light fixtures, electric outlets, equipment and other fixtures are accessible for repair and replacement.	10	
3.3	Classroom floor coverings require minimum of care.	10	
3.4	Ceilings and walls are easily cleaned and resistant to stain.	10	
3.5	Built-in equipment is designed and constructed for ease of maintenance.	10	
3.6	Floors in restrooms, kitchens, cafeterias and corridors require a minimum of maintenance.	10	
3.7	Walls and ceilings in service areas can be easily cleaned.	10	
3.8	Restroom fixtures are wall mounted and of quality finish.	10	
3.9	Adequate custodial storage space with water and drain is accessible to all areas.	10	
3.10	Adequate electric outlets and power are available in every area to permit routine cleaning.	10	
	TOTAL– PLANT MAINTAINABILITY [see Form SFA-1]	100	

4.0 SCHOOL BUILDING SAFETY — 200 POINTS

		Possible Points	Points Allotted
SITE SAFETY			
4.1	Access streets have sufficient signals and signs to permit safe entrance to and exit from school area.	5	
4.2	Off-site sidewalks are available for safety of pedestrians.	5	
4.3	On-site sidewalks and steps are protected by proper signs and signals.	5	
4.4	Vehicular entrances and exits are safe for traffic flow.	5	
4.5	Student loading areas are segregated from other vehicular traffic and pedestrian walkways.	15	
4.6	Locations and types of playground equipment are free from hazard.	5	
BUILDING SAFETY			
4.7	The heating unit(s) is located away from student occupied areas in accordance with local building code.	20	
4.8	Classroom doors are recessed and open outward.	10	
4.9	Exterior doors open outward and are equipped with panic hardware.	10	
4.10	Exits are marked with lighted exit signs on separate electrical circuits	10	
4.11	Glass is properly located and protected to prevent accidental student contact–safety glass or wire glass where code requires.	5	
4.12	Emergency lighting is provided throughout building.	10	
4.13	Flooring (including ramps) is maintained in a nonslip condition.	5	
4.14	Stair risers do not exceed 7 1/2 inches and range in number from 3 - 15.	5	
4.15	Multi-story buildings have at least two stairways.	15	
4.16	Fixed projections in the traffic areas do not extend more than eight inches from the corridor wall.	5	
4.17	Traffic areas terminate at an exit or a stairway leading to an egress.	5	
EMERGENCY SAFETY			
4.18	Automatic and manual fire alarm system with a distinctive sound and flashing light is provided.	10	
4.19	There are at least two independent exits to safety from any point in the building.	10	
4.20	Stairways and/or exits are of fire-resistant material.	10	
4.21	Noncombustible and/or fire-resistant materials are used throughout the structure.	10	
4.22	Adequate fire safety equipment is properly located.	15	
4.23	Ample space is provided in traffic and protected areas for student safety in the event of natural disasters.	5	
	TOTAL–SCHOOL BUILDING SAFETY [see Form SAF-1]	200	

5.0 EDUCATIONAL ADEQUACY — 200 POINTS

		Possible Points	Points Allotted
	ACADEMIC LEARNING AREAS		
5.1	Size of academic learning areas meets minimum standard specifications.	10	
5.2	Leaning areas are conveniently located near related educational activities.	10	
5.3	Academic learning areas are situated away from noisy areas such as cafeterias and gyms.	5	
5.4	Storage for student materials is adequate.	5	
5.5	Storage for teacher materials is adequate.	5	
5.6	Design of learning areas is compatible with instructional need.	10	
	SPECIAL LEARNING AREAS		
5.7	Special learning area(s) meets minimum standards for size.	10	
5.8	Gymnasium, athletic fields and auxiliary facilities adequately serve the needs of the senior high school program.	10	
5.9	Library/Resource/Media Center provides appropriate and attractive space.	10	
5.10	The music program is provided separate adequate storage and sound treated space.	10	
5.11	Science laboratories provide sufficient space for group instruction, individual experiments and adequate locked storage.	10	
5.12	The space for art is sufficient to accommodate the program and equipment.	10	
5.13	Storage for student materials in special learning areas is adequate.	5	
5.14	Storage for teacher materials in special learning areas is adequate.	5	
5.15	Design of learning areas is compatible with instructional need.	10	
5.16	Vocational programs are housed in space that meets standards.	5	
	SUPPORT SPACE		
5.17	Administrative offices provide the administrative personnel with sufficient work space and privacy.	10	
5.18	Suitable reception area for students, teachers and visitors is available.	5	
5.19	Ample and conveniently located storage includes secure place for permanent records.	5	
5.20	Cafeteria is attractive with sufficient space for service delivery, storage and food preparation.	10	
5.21	Clinic area is near administrative offices and is equipped to meet elementary requirements.	5	
5.22	Teachers' lounge and work area provides teachers a place for rest and preparation.	10	

		Possible Points	Points Allotted
5.23	Counselor's office insures privacy and sufficient storage.	5	
5.24	Clothing/book areas are of sufficient size and number to serve student needs.	5	
5.25	Book room and general storage spaces near administrative offices are adequate for books, supplies and equipment.	5	
5.26	Student activity area permits social gathering of students during leisure time.	10	
	TOTAL– EDUCATIONAL ADEQUACY [see Form SFA-1]	200	

6.0 ENVIRONMENT FOR EDUCATION — 200 POINTS

		Possible Points	Points Allotted
	EXTERIOR ENVIRONMENT		
6.1	Overall design is aesthetically pleasing.	10	
6.2	Site and building are well landscaped.	10	
6.3	Building materials provide attractive color and texture.	5	
6.4	Entrances are appealing to students of the age and maturity of students served.	5	
6.5	Entrances and walkways are sheltered from sun and inclement weather.	10	
	INTERIOR ENVIRONMENT		
6.6	Interior stairways and ramps have handrails that meet code requirements.	5	
6.7	Movement areas permit ease and control of traffic flow.	10	
6.8	Commons area provides ample space for student movement and accommodations for sitting as well as standing.	10	
6.9	Large group areas are designed for effective student control.	10	
6.10	There is provision for year around comfortable temperature throughout the building.	15	
6.11	Ventilating system provides adequate circulation of clean air.	15	
6.12	Fenestration contributes to a pleasant environment.	10	
6.13	Lighting system provides proper intensity, diffusion and distribution of illumination.	15	
6.14	Acoustical treatment of ceilings, walls and floors provides effective sound control.	10	
6.15	Exterior noise is not a distraction in the classrooms.	10	
6.16	Color schemes, building materials and decor provide an impetus to learning.	20	
6.17	Furniture and equipment provide a pleasing atmosphere.	10	
6.18	Drinking fountains and restroom facilities are conveniently located.	15	
	TOTAL– ENVIRONMENT FOR EDUCATION [see Form SFA-1]	200	

JUSTIFICATION FOR ALLOCATION OF POINTS

Building Level _____

Appraisal Section _____

Indicate the justification for the appraisal decision in the space provided.

Building features that clearly exceed criteria:

1. _____
2. _____
3. _____
4. _____

Building features that are non-existent or very inadequate:

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FORM SFA-1